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ABSTRACT

This document is one in a series of monographs that present concepts and practices reflecting an analysis of programs to prepare general and special education personnel. This monograph presents a conceptual model of the seven major phases and tasks involved in planning, implementing, and evaluating personnel preparation programs in the field of education, including a) the formulation of the program rationale, b) curricular planning, c) evaluational planning, d) administrative planning, e) instructional planning, f) program implementation, and g) program evaluation. Also presented are some views on how prototype programs might be developed, disseminated, installed, and maintained. Six appendixes include information concerning recruiting and maintaining education professionals, implications for the preparation of teachers, and criteria for admission to preparation programs and accredited professional standing. Bibliographic references follow each chapter and tables are presented throughout the document. (PD)

ED 090214

COMPETENCY-BASED TRAINING IN EDUCATION:

a conceptual view

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SP007 950

Preface

The document you are about to read was prepared as part of a Special Project funded by the Division of Training, BEH, USOE. This preface (1) describes the general frame of reference from which we approach the concerns of special education, (2) summarizes the major products produced as part of the Special Project activity, and (3) acknowledges those dedicated persons without whom the project could not have been undertaken.

A General Frame of Reference[1]

It is unfortunate that special educators continue to deal with major topics, such as classroom instruction and personnel preparation, as if these topics were unique to special education or a specific category of exceptionality. A major effort needs to be made to avoid contributing further to the erroneous impression that the concerns of general and special education (and of the various areas of special education) are mutually exclusive and/or substantively different. This impression is not only false, but leads to the harmful impression that general and special educators (and various groups of special educators and other professionals) have little to contribute to each other.

It seems reasonable to suggest that, in reality, the concerns of special education are best viewed within the framework of a conceptualization of the basic concerns confronting the American system of formal education. Figure A represents my attempt to summarize these basic concerns and the relationship between general and special education with reference to these concerns. Broadly and practically stated, the basic programmatic concerns are:

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[1] Some of the discussion which follows also appears in an article by the author entitled "The relationship between general and special education," (Academic Therapy, 1972, VII, 323-326).

1) What should be the role (nature and scope) of formal education in America today and what changes should be considered for the future?
2) What and how should we teach?
3) What types of personnel (roles and functions) are necessary for accomplishing the desired goals of formal education?
4) How can we best recruit, educate, and retain the high level of personnel necessary for ensuring high quality education?

It seems clear that these questions are so closely interwoven that the manner in which any one is answered has profound implications for the others, e.g., the role one establishes for the schools provides the basis for determining the instructional content and process which, in turn, should clarify the personnel required and their training needs. And, of course, any position taken with regard to these questions raises the concern over evaluation, i.e., what and how to describe and judge the positions which have been and currently are being postulated as answers to education's basic concerns.

Finally, with reference to the relationship between general and

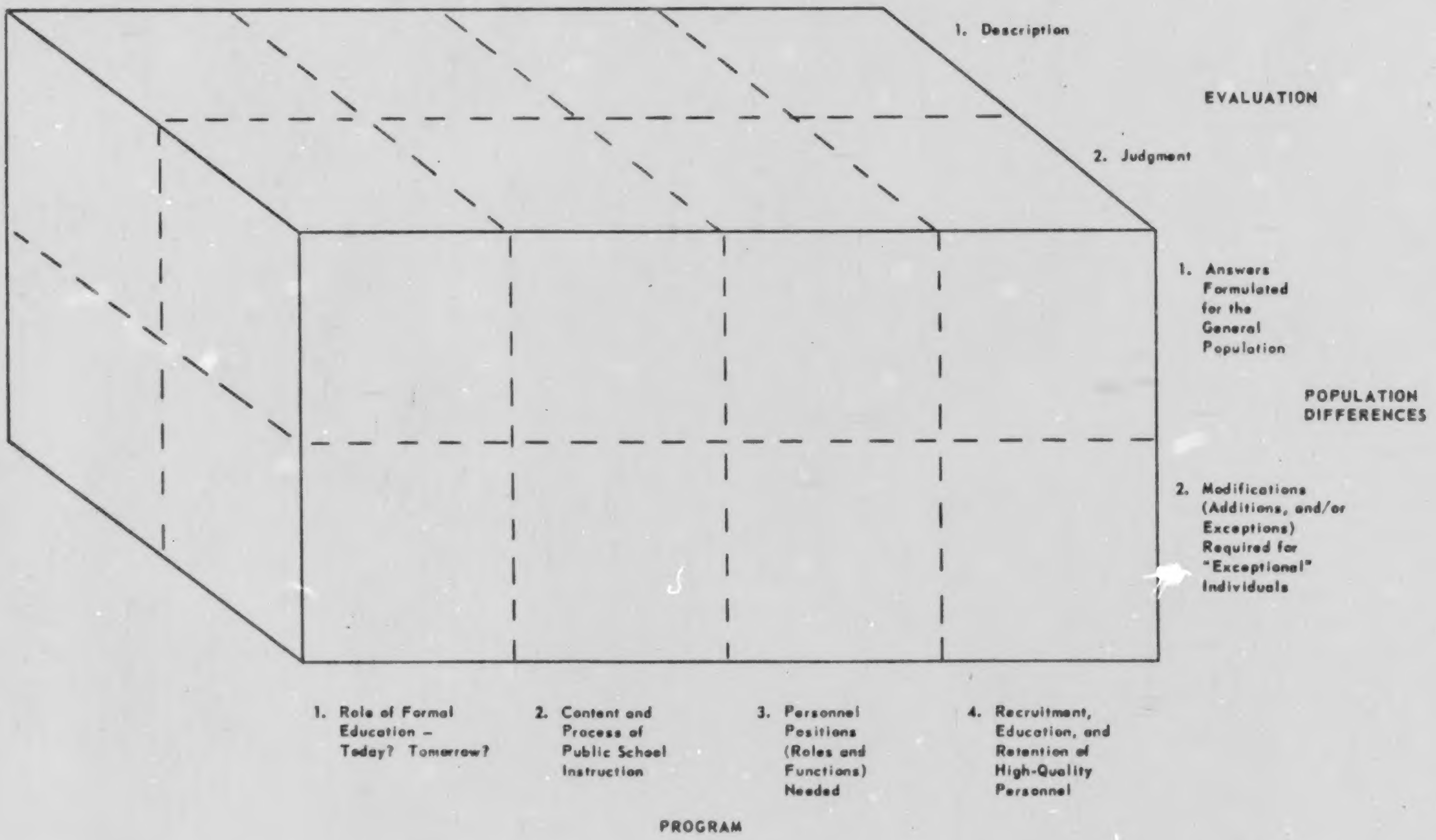
1. Description
EVALUATION
2. Judgment
1. Answers Formulated for the General Population
POPULATION DIFFERENCES
2. Modifications (Additions, and/or Exceptions) Required for "Exceptional" Individuals
1. Role of Formal Education – Today? Tomorrow?
2. Content and Process of Public School Instruction
3. Personnel Positions (Roles and Functions) Needed
4. Recruitment, Education, and Retention of High-Quality Personnel
PROGRAM

Figure A. Basic Concerns Confronting the American System of Education special education, it is felt that the major issues and problems[2] encompassed by the above-stated concerns are substantively the same for both sub-fields of education. However, since an answer formulated for the majority population may require modifications (additions and/or exceptions) when applied to exceptional individuals, special education is confronted with the additional concern of clarifying rationally and empirically such modifications.

From a conceptual viewpoint, then, it seems reasonable to suggest that the systematic resolution of the basic concerns confronting the education system (see Figure A) requires, first, formulation of answers with reference to the general population and, second, clarification of the modifications required with reference to all and/or specific groups of exceptional individuals. In practice, of course, such a systematic approach is not always feasible. Thus, special educators often find it necessary to work in an area of concern where major issues and problems have been resolved for the general population in ways which special educators view as unacceptable or where answers simply are nonexistent. In such instances, whether or not it is explicitly understood and stated, special educators are forced to deal with issues and problems which are common to both general and special education, and therefore, the answers formulated have application for both the majority population and exceptional individuals. That is to say, such answers will necessarily be either modified versions of answers which have direct application to the general population or they will be directly applicable as formulated.

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[2] The term concern is used to delineate a broad area of focus; the term issue is used to delineate a sub-area over which there is theoretical and/or procedural disagreement; and the term problem is used to delineate a sub-area over which there is no disagreement, but there is difficulty in formulating an appropriate solution.

(Unfortunately, the application of such answers to the general population often is not made because the special educator has not discussed his work's relationship to general education. It is for this reason that many of special education's potential contributions to general education are lost. Equally as unfortunate is the waste which accrues from the failure of special educators to build upon the foundation laid by their colleagues in general education. With regard to a wide variety of questions related to the education of exceptional individuals, it is not uncommon for special educators to approach such concerns [issues and problems] as if the questions raised were new and unique, rather than simply being specialized versions of more basic questions which have long confronted general education. As a result, special educators too often needlessly redo work previously accomplished by general educators, both groups initiate parallel activities, and, in general, progress in both sub-fields of education is hindered. [Analogous implications, of course, could be discussed with reference to the interrelationships between the various categories of exceptionality.])

The preceding views should clarify for the reader the orientation with which I approach such questions as:

1) What is the nature of the heterogeneity which exists in such populations of pupils currently categorized as learning disabled, emotionally disturbed, educationally handicapped, disadvantaged, and so forth, and what are the implications of this heterogeneity for service, training, and research?

2) What and how should we teach these pupils?

3) Do we need specialist teachers?

4) How should we educate personnel to ensure high quality classroom programs which meet the needs of such pupils?

5) How should we evaluate the educational programs which serve such pupils and the programs which prepare the needed professionals?

Products

In the various written products resulting from project activity, some ideas and experiences are shared which have a bearing on these and other related matters. What is presented is neither rooted solely in special education nor intended only for special educators. The concepts and practices reflect an analysis of general and special education classroom and personnel preparation programs; the implications which are suggested are for regular and special classroom instruction and regular and special personnel preparation programs. It is, indeed, my hope that the various products will have some heuristic value for any reader and for the field at large. These products are:

I. Competency-Based Training in Education: a conceptual view--This monograph presents a conceptual model of the major phases and tasks involved in planning, implementing, and evaluating personnel preparation programs in the field of education. Specifically, seven phases are discussed: (1) the formulation of the program rationale, (2) curricular planning, (3) evaluational planning, (4) administrative planning, (5) instructional planning, (6) program implementation, (7) program evaluation. Key references are provided to resources which have relevance for each phase. Also discussed are: the view that competency-based training is an important but insufficient orientation to personnel preparation, and some ideas related to the development and diffusion of prototype models. Included in the appendices are: references for competency-based and other related personnel preparation program models, a representation of the sequence of major tasks involved in planning, implementing, and evaluating a school system program, a table describing sources of information and materials, and brief discussions of three important topics related to personnel preparation--"Recruiting and Maintaining Education Professionals," "Some Specific Implications for the Preparation of Teachers," and "Criteria for Admission to Preparation Programs and Accredited Professional Standing."

II. Facilitating Educational Change and Preparing Change Agents--This monograph is divided into two parts. The first part, entitled "The Development and Diffusion of 'Mainstreaming' Approaches," is devoted to a discussion of procedures by which prototype mainstreaming approaches might be developed, disseminated, installed, and maintained. More specifically, (1) four major developmental steps are discussed, (2) factors which must be dealt with in planning strategies for institutional change are identified, (3) a proposal for facilitating national diffusion is suggested, and (4) an example of a local diffusion strategy using master or specialist teachers as change agents is described.

The second part of this monograph is entitled "The Preparation of Change Agents Who Can Diffuse 'Mainstreaming' Approaches." The dual purpose of this section is (1) to describe the pilot program we implemented to prepare change agents and (2) to discuss the implications derived from our experiences and findings which have relevance for the future preparation of such personnel. Topics discussed are the selection of participants, program rationale, instructional content and process, and program evaluation.

III. Learning Problems and Classroom Instruction--This monograph presents our orientation to the topic of youngsters with learning/behavior problems and to the question regarding what teachers should do with such youngsters. The primary emphasis is on conceptualizing the classroom needs of groups assigned labels such as learning disabled, emotionally disturbed, educationally handicapped, and culturally disadvantaged. The conceptualization which evolves is based on the view that each of these categories encompasses an extremely heterogeneous group of youngsters--ranging from those who do have major disorders-deficits which interfere with their learning to those whose learning and behavioral problems stem primarily from the deficiencies of the school system. This view of the heterogeneity which exists within such exceptional children groupings leads us to suggest some very specific implications for diagnosis, remediation, and prevention, and these implications, in turn, lead to a discussion of implications for teacher education and accountability.

More specifically, part 1 ("Learning Problems Revisited") encompasses in the initial chapter, a description of four youngsters with learning problems. This is followed by a general discussion of the heterogeneity which exists in the learning disabled, emotionally disturbed, educationally handicapped, and disadvantaged populations (Chapter 2), and a general conceptualization of the processes of learning and teaching and their relationship to successful and unsuccessful classroom instruction (Chapter 3). In part 2 ("Remedial Classroom Instruction"), building on the concepts evolved in part 1, it is suggested that teachers can identify and attempt to meet the remedial needs of pupils with learning problems by employing a set of sequential and hierarchical teaching strategies. A general exposition of the two step process which is involved is presented in Chapter 4 and is elaborated upon, conceptually and practically, in Chapters 5-8. Finally, with a view to the need for accountability in education, the process of evaluation is conceptualized and some ideas are offered for evaluating school programs (Chapter 9). Also included in the appendices are discussions of key variables related to educational programs, problems related to early intervention efforts, motivation and the classroom, and instructional procedures (a generic view).

IV. Resource Guide: Instructional Planning--This resource guide was prepared as a companion work to the monograph entitled Competency-Based Training in Education: a conceptual view (cited above). It is intended primarily for those actually engaged in the tasks of instructional and curricular planning, but it should also be useful to those who wish to learn more about such planning, Specifically, the guide includes: I. annotated references to some key general references which provide an orientation to curricular and instructional planning; II. a guide to some specific resources on curricular and instructional planning; III. an outline of sources of information and materials; IV. discussions of curricular and instructional planning, including several supplementary "handouts" designed as instructional aids.

V. Resource Guide: Evaluational Planning--This resource guide contains annotated references to relevant literature and other sources of information. It was prepared as a companion work to the monograph entitled Competency-Based Training in Education: a conceptual view (cited above). Described are a variety of resources which can be used by (a) evaluation novices who want to pursue a program of self-education and (b) persons with a fair degree of understanding regarding evaluation, but who want to expand their knowledge regarding the process of evaluation and the resources which are available for use in teaching about, planning for, or carrying out program evaluation. The annotated references in this document are divided into the following parts: I. some key general discussions relevant to program evaluation; II. specialized discussions and practical aids focusing specifically on (a) methodology and design, (b) teacher effectiveness, and (c) handbooks and guides; III. discussions of techniques and instruments including (a) generic discussions, and (b) catalogues and reviews; IV. general resources for finding information relevant to evaluation. Also included are two appendices: (A) some thoughts and aids on evaluational planning; and (B) procedures being developed for evaluation of the experimental program undertaken as a part of our special project activity.

Acknowledgements

The carrying out of this project was made possible by the efforts and dedication of a great many individuals at the University of California, Riverside, and in the Riverside City Schools. The contributions have

been many and diverse. It is not feasible to describe and acknowledge every individual's contribution; however, there are some individuals whose intensive participation in various aspects of the project should not go unmentioned.

Of major importance throughout the duration of the project has been the initiative and energy of the project staff. Molly Carpenter was involved in every phase of the project over the past two years. Her ideas, productivity, attention to detail, and her moral support truly were indispensable. My long time colleague, Jeannie Fryer, escaped (reluctantly, I know) after the first year; nevertheless, her stamp on the project was indelible. We could not have survived the first year without her, and her periodic consultation during the second year was most helpful. The rest of the staff--Marilyn Lucas, Noi Thongutai, Eddi Knopf during the first year, Jim Hull, Elliott Duchon, Carol Meredith during the second year--contributed in countless, unique ways. Their participation in the various phases of the project made the hard times bearable and the good times a real joy. Clearly, the project staff shares the responsibility as well as the credit for all that has been accomplished.

The interest and cooperation of the teachers and administrators of the Riverside City School District were all that any project staff could ask for. We are especially indebted to Ray Berry, Bud Marley, Mabel Purl, Tom Phillian, Bill Nichols, Bill Hart, Joan Cudney, Raul Hernandez, David Tew, Chris Cordner, Dan Kenley, Sheila Fields, Isabel Flannigan, Carol Dolener, Jean Hubbel, Kathy Kimball, Judy Hjelseth, Laura Amick, Ida Robinson, Kathy McNichol, Kristie Streifel, and the many persons at Adams, Palm, Madison, and Longfellow Elementary Schools who contributed in various ways.

We were most fortunate that there were five venturesome individuals who were willing to take a year's leave of absence from their classrooms in order to enroll in the experimental program. Somehow they survived their experience. They are: Sheila Coker, Sally Grossman, Betty Hart, Alverna Messick, and Imelda Sullivan. Without their initiative, courage, and competence, this project could not have been undertaken.

Finally, but not least, there is Nancy Adelman. She's responsible for more of this than she knows.

Howard Adelman, Ph.D.
Project Director
August, 1973

COMPETENCY-BASED TRAINING IN EDUCATION: a conceptual view

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Appendices

I. Competency-Based and Other Related Personnel Preparation Program Models: Some References

II. Representation of the Sequence of Major Tasks Involved in Planning, Implementing, and Evaluating a School System Program

III. Sources of Information and Materials

IV. Recruiting and Maintaining Education Professionals

V. Some Specific Implications for the Preparation of Teachers

VI. Criteria for Admission to Preparation Programs and Accredited Professional Standing

Chapter 1

Competency-Based Training: An Important But Insufficient Orientation to Personnel Preparation

The continuing search for ways to improve systematic professional training in the field of education is reflected in the rapidly escalating interest in competency-based programs (e.g., see Cooper, DeVault, et al., 1973; Andrews and Allen, 1972; Cohen and Hersh, 1972; Ivey and Rollin, 1972; Rosner, 1972; Nash and Agne, 1971; Chambers and Graham, 1971; Shermis and Barth, 1971; Voelker, 1970; Nash, 1970; Yarington, 1969; Allen and Krasno, 1968; also see Appendix I).

In 1970, I prepared a special project proposal entitled "A Competency-Based Model Training Program." My purpose in choosing that title was to highlight the fact that the program would encompass a systematic focus on helping participants acquire specific knowledge, skills, and attitudes with reference to the planning, implementation, and evaluation of educational programs. Furthermore, prior to "certifying" that an individual had completed the program, we wanted each participant to demonstrate that (s)he had acquired at least the minimal level of competence necessary for on-the-job success. This type of program was seen as being in marked contrast to personnel preparation programs which primarily emphasize the completion of a specific number of courses, units, and hours.

Unfortunately, over the past two years, the phrase "competency-based personnel preparation" appears to have acquired a more restricted connotation. That is, many program planners seem to feel that all that is needed in order to convert their current programs into competency-based programs is (1) the formulation of a highly specific list of behavioral objectives and (2) the use of criterion referenced measuring instruments to verify that the behaviors have been acquired.

This simplistic interpretation has led to a great deal of activity which essentially has ignored profoundly important theoretical and practical questions related to what is involved in effective personnel preparation.[1] This monograph should help to counteract naive approaches by emphasizing the nature and scope of the major tasks involved in establishing such a program. Throughout the discussion, it will be stressed that (1) "competency-based" is an important but not a sufficient orientation to the preparation of personnel, (2) the development of effective, systematic, competency-based programs requires resources well beyond those currently available to most programs, and therefore (3) some radically different approaches to program development are needed if personnel preparation is to be significantly upgraded.

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[1] I recognize that there is a core of sophisticated theorists and practitioners in the field. Indeed, their works are cited throughout this monograph. Unfortunately their impact is not reflected yet in very many current personnel preparation programs in education.

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Chapter 2

Stopping the Great Training Robbery:

Phase 1--A Program Rationale

Whenever I reflect on the formal business of schooling, be it at the elementary school or university level, I think about some lines written by Richard Brautigan, a poet of today.

> "I remember all those 1000's of hours
> that I spent in grade school watching the clock
> waiting for recess or lunch or to go home.
> Waiting: for anything but school.
> My teachers could easily have ridden with Jesse James
> for all the time they stole from me."

These are painful lines. The words strike a chord of recognition in me which spans my involvement with schools from the lower grades through higher education to my present role which includes training others. As a student, I always felt something was not quite right; as a university professor, I have come to more fully understand what is wrong. Brautigan is right--there's a whole lot of stealing of time going on, as well as a number of other thefts which are best left unmentioned.

The time has come to end this great training robbery.

But how do we accomplish this?

After all, the history of teacher education in this country reflects a constant searching for qualitative instruction in pedagogy. And yet, the unsuccessful nature of this search is clearly reflected in the majority of the statements made in the 1960's regarding the status of teacher education. For example, as Sterling M. McMurrin, former United

States Commissioner of Education, stated in 1963:

> . . . Our average citizen has taken it for granted that teaching, especially in the secondary and elementary schools, is a profession entirely appropriate for persons of second- or third-rate ability. We have all too commonly, therefore, proceeded to provide them with second- or third-rate educations and pay them third- or fourth-rate salaries. [p. x]

And in the mid-1960's, Don Davies, then executive secretary for the National Education Association's National Commission for Teacher Education and Professional Standards, gave an equally bleak appraisal to a group of teacher educators:

> Teacher education is the slum of American education. It is a slum because it is characterized by neglect, poverty, isolation, alienation, exploitation, lack of status, and insecurity. Teacher education is in trouble, just as slums are in trouble, because not enough influential institutions or agencies or individuals take it seriously or care enough about it to take positive action. The scholars don't; the state legislatures don't; the teachers' organizations don't; the Office of Education doesn't. Our society simply has not yet been willing to devote adequate intellectual and monetary resources to the task of developing a high quality personnel for our schools. [1968, p. 41]

During this last decade, however, perhaps the voice most often heard has been that of James Bryant Conant. The extensive and heated controversy which Conant's (1963) "famous twenty-seven recommendations" stimulated has helped to make the statements of McMurrin and Davies less true in 1973 than they were in 1965. In the last few years there has been more interest and less neglect. And there has been some action, such as the nine projects supported by the U.S. Office of Education, Bureau of Research, which have suggested models for elementary teacher education programs;[1]

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[1] These models have and continue to generate a great deal of important activity with reference to improving personnel preparation in education (e.g., see Rosner, 1972; for a discussion of the models see Clarke, 1969; Burdin and Lanzilloti, 1969; Engbretson, 1969; also see Appendix I).

in addition, there was the passage of the Education Professions Development Acts of 1967. The basic problem remains, however; we are still not ". . . developing a high quality personnel for our schools," and this lamentable state of affairs will likely continue for some time to come.

Why is this? There is a temptation to lay the entire blame on the various socio-political and ideological forces which play potent roles in shaping education in America today. However, a significant part of the problem derives from the fact that most personnel preparation programs in education have not been clearly conceptualized, and the basic concerns, issues, and problems which permeate such programs have not been critically analyzed. The preparation for the project which spawned this monograph included a review of the literature designed to bring the basic issues and problems into focus (Adelman, 1972a, b, c).

Based on that preliminary analysis and subsequent literature reviews, as well as our experimentation in the field (Adelman, 1972d; Adelman and Feshbach, 1971), we have delineated a conceptual model of the major phases and tasks involved in planning, implementing, and evaluating personnel preparation programs in the field of education. More specifically, we have come to view such programs as involving seven phases of activity, with each phase encompassing a set of sequential tasks. The seven phases are: (1) a phase devoted to formulating an overall program rationale, (2) a curricular planning phase, (3) an evaluational planning phase, (4) an administrative planning phase, (5) an instructional planning phase, (6) an implementation phase, and (7) an evaluation phase (see Figures 1 and 2 and Table 1).

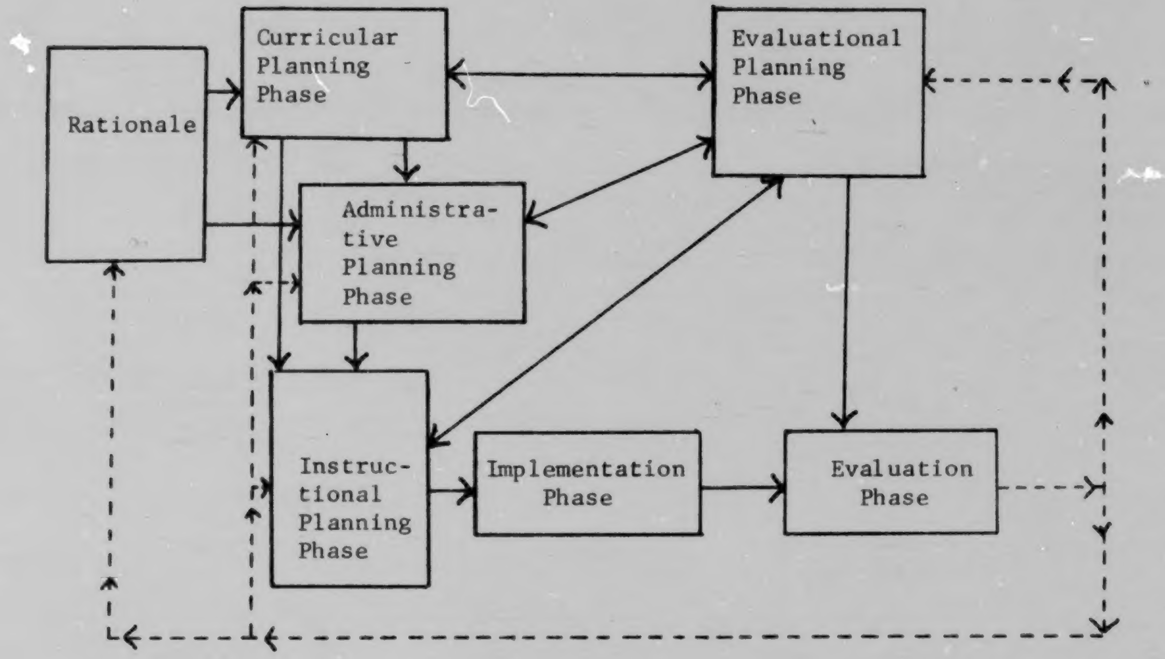
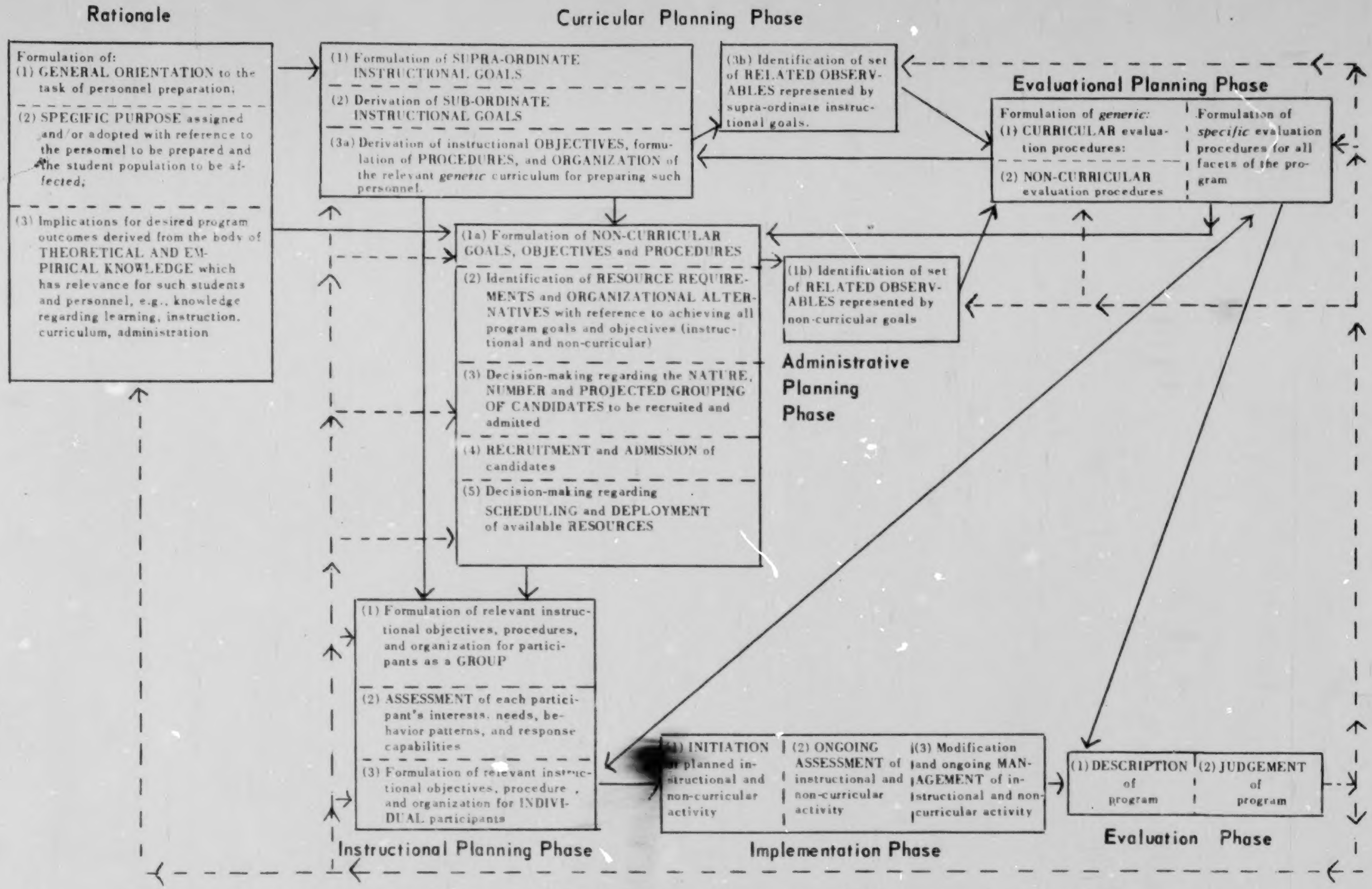

Rationale
Curricular Planning Phase
Evaluational Planning Phase
Administrative Planning Phase
Instructional Planning Phase
Implementation Phase
Evaluation Phase

Figure 1. The Process of Planning, Implementing, and Evaluating an Educational Program.



Rationale
Formulation of:
(1) GENERAL ORIENTATION to the task of personnel preparation;
(2) SPECIFIC PURPOSE assigned and/or adopted with reference to the personnel to be prepared and the student population to be affected;
(3) Implications for desired program outcomes derived from the body of THEORETICAL AND EMPIRICAL KNOWLEDGE which has relevance for such students and personnel, e.g., knowledge regarding learning, instruction, curriculum, administration
Curricular Planning Phase
(1) Formulation of SUPRA-ORDINATE INSTRUCTIONAL GOALS
(2) Derivation of SUB-ORDINATE INSTRUCTIONAL GOALS
(3a) Derivation of instructional OBJECTIVES, formulation of PROCEDURES, and ORGANIZATION of the relevant generic curriculum for preparing such personnel.
(3b) Identification of set of RELATED OBSERVABLES represented by supra-ordinate instructional goals.
Evaluational Planning Phase
Formulation of generic:
(1) CURRICULAR evaluation procedures:
(2) NON-CURRICULAR evaluation procedures
Formulation of specific evaluation procedures for all facets of the program
(1a) Formulation of NON-CURRICULAR GOALS, OBJECTIVES and PROCEDURES
(2) Identification of RESOURCE REQUIREMENTS and ORGANIZATIONAL ALTERNATIVES with reference to achieving all program goals and objectives (instructional and non-curricular)
(3) Decision-making regarding the NATURE, NUMBER and PROJECTED GROUPING OF CANDIDATES to be recruited and admitted
(4) RECRUITMENT and ADMISSION of candidates
(5) Decision-making regarding SCHEDULING and DEPLOYMENT of available RESOURCES
(1b) Identification of set of RELATED OBSERVABLES represented by non-curricular goals
Administrative Planning Phase
(1) Formulation of relevant instructional objectives, procedures, and organization for participants as a GROUP
(2) ASSESSMENT of each participant's interests, needs, behavior patterns, and response capabilities
(3) Formulation of relevant instructional objectives, procedure, and organization for INDIVIDUAL participants
Instructional Planning Phase
(1) INITIATION of planned instructional and non-curricular activity
(2) ONGOING ASSESSMENT of instructional and non-curricular activity
(3) Modification and ongoing MANAGEMENT of instructional and non-curricular activity
Implementation Phase
(1) DESCRIPTION of program
(2) JUDGEMENT of program
Evaluation Phase

Figure 2. The Sequence of Major Tasks Involved in Planning, Implementing, and Evaluating Personnel Preparation Programs.

TABLE 1

The Major Phases and Tasks Involved in Planning, Implementing, and Evaluating Personnel Preparation Programs

Rationale

Formulation of:
(1) GENERAL ORIENTATION to the task of personnel preparation;
(2) SPECIFIC PURPOSE assigned and/or adopted with reference to the personnel to be prepared and the student population to be affected;
(3) Implications for desired program outcomes derived from the body of THEORETICAL AND EMPIRICAL KNOWLEDGE which has relevance for such students and personnel, e.g., knowledge regarding learning, instruction, curriculum, administration.

Curriculum Planning Phase

(1) Formulation of SUPRA-ORDINATE INSTRUCTIONAL GOALS (2) Derivation of SUB-ORDINATE INSTRUCTIONAL GOALS (3a) Derivation of instruction OBJECTIVES, formulation of PROCEDURES, and ORGANIZATION of the relevant generic curriculum for preparing such personnel	(3b) Identification of set of RELATED OBSERVABLES represented by supra-ordinate instructional goals

Evaluational Planning Phase

Formulation of relevant generic: (1) CURRICULAR evaluation procedures (2) NON-CURRICULAR evaluation procedures	Formulation of specific evaluation procedures for all facets of the program

Administrative Planning Phase

(1a) Formulation of NON-CURRICULAR GOALS, OBJECTIVES, and PROCEDURES (2) Identification of RESOURCE REQUIREMENTS AND ORGANIZATIONAL ALTERNATIVES with reference to achieving all program goals and objectives (instructional and non-curricular) (3) Decision-making regarding the NATURE, NUMBER, and PROJECTED GROUPING OF CANDIDATES to be recruited and admitted (4) RECRUITMENT, SELECTION, and ADMISSION of candidates (5) Decision-making regarding SCHEDULING and DEPLOYMENT OF available RESOURCES	(1b) Identification of set of RELATED OBSERVABLES represented by non-curricular goals

TABLE 1 (cont.)

Instructional Planning Phase

(1) Formulation of relevant instructional objectives, procedures, and organization for participants as a GROUP
(2) ASSESSMENT of each participant's interests, needs, behavior patterns, and response capabilities
(3) Formulation of relevant instructional objectives, procedures, and organization for INDIVIDUAL participants.

Implementation Phase

(1) INITIATION of planned instructional and non-curricular activity	(2) ONGOING ASSESSMENT of instructional and non-curricular activity	(3) Modification and ongoing MANAGEMENT of instructional and non-curricular activity

Evaluation Phase

(1) DESCRIPTION of program	(2) JUDGEMENT of program

As indicated in Figures 1 and 2, the seven phases do not occur in a strictly sequential order. For example, after the formulation of the program rationale, both curricular and administrative planning can be undertaken; also, the interaction between evaluational planning and the other planning phases should be noted (as represented by the two-way arrows).[2]

This chapter presents a discussion of the major tasks involved in formulating a program rationale; subsequent chapters will present a discussion of the other program phases and the tasks they encompass.[3] Throughout this discussion, the emphasis is on functions rather than roles. The intent is to clarify major tasks and the interrelationships among such tasks. The question as to who should perform such tasks for pre-service and for in-service programs involves matters related to assigned responsibility and the availability of resources such as competence, time, and money; discussion of these matters is deferred for the most part to Chapter 8.

The foundation and guidelines for the development of any program of systematic instruction is its rationale. With reference to personnel preparation, such a rationale should encompass:

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[2] It should be noted that the dashed lines in Figures 1 and 2 represent major feedback loops. The appropriate feedback loops within each phase have been excluded to avoid making the figures even more complex than they already are.

[3] For purposes of comparison, Appendix II contains a figure representing the major tasks involved in planning, implementing, and evaluating a school system instructional program.

Formulation of:
(1) GENERAL ORIENTATION to the task of personnel preparation;

(2) SPECIFIC PURPOSE assigned and/or adopted with reference to the personnel to be prepared and the student population to be affected;

(3) Implications for desired program outcomes derived from the body of THEORETICAL AND EMPIRICAL KNOWLEDGE which has relevance for such students and personnel, e.g., knowledge regarding learning, instruction, curriculum, administration

General Orientation

In formulating a general orientation, the emphasis is on stating major assumptions, philosophical orientations, and programmatic commitments. The following general propositions and aims were formulated to guide our work over the past few years and are offered here as an example which may be of some use to others.

Proposition 1. Systematic instruction is a central concern in education personnel preparation programs. This should be manifested both in the program's process and content. In terms of process, the program should be a model of systematic program planning, implementation, and evaluation. In terms of content, the program's overriding concern should be the task of systematically educating the nation's youth. (This proposition reflects the commitment both to systematic instruction[4] and to "practicing what one preaches.")

Proposition 2. Personnel preparation should be conceptualized as involving two major phases and three processes. The two phases are: (1) a pre-service phase--which encompasses that period of formal education related to that role and function. The three processes are: (1) a training process, which is designed to facilitate mastery of the craft (and art) of a particular role or function; (2) a delimited educative process for acquisition of a broad and deep understanding of the knowledge and research tools upon which the positive growth of the field of education depends; and (3) a general educative process, usually referred to as a "general and liberal education," which should be at least equivalent to that experienced by persons preparing for other professions. It should be noted that teachers-in-training usually are involved in all three processes simultaneously.

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[4] Some of the advantages and limitations of a systematic orientation to instruction are suggested by LeBaron (1973) in his discussion of systems analysis and teacher education.

Proposition 3. Such preparation then, is dedicated to preparing individuals who are not only competent in performing a given set of job functions, but who are effective members of society and of a profession which has a unique role to play in that society.

Proposition 4. The nature and scope of the instruction provided must vary with reference to--but not be limited by--the functions (especially those related to desired student outcomes) of the particular professional role for which the program participant is preparing.

Proposition 5. The content of personnel preparation programs should be conceptualized in terms of the specific abilities and level of minimal competence needed to perform the indicated functions, rather than in terms of courses, units, and hours.

Proposition 6. The instructional process employed in helping program participants develop needed competence should involve coordinated and integrated academic, observational, and participatory experiences. There should be special emphasis on utilizing a comprehensive apprenticeship-like model whenever it is appropriate and feasible and on accommodating individual differences among program participants (Adelman, 1972a).[5] In addition, there should be emphasis on facilitating (a) acceptance of personal responsibility for learning and (b) capability to pursue learning both cooperatively and independently using self-evaluative feedback.

Proposition 7. In addition to its instructional facets, a personnel preparation program should have an explicitly stated set of non-curricular goals, i.e., goals related to administrating the program and to performing relevant research, in-service training, and public service functions.

Proposition 8. The evaluation of any such program should attempt to assess the program's positive and negative effect on the participants, on the pupils who are directly or indirectly affected by the participants, on the relevant communities, school districts and institutions of higher education, and on the field in general.

Broadly stated, our major long-range aims (as differentiated from program goals and instructional objectives) which are professionally relevant emphasize the need to provide each participant with the opportunity to (1) acquire at least the minimal competence needed for effective on-the-job functioning, (2) continue to develop toward a high level of professional competence, and (3) learn to appreciate and accept the full responsibility of his professional role. Encompassed in such aims is a recognition of the need to develop professionals who have the knowledge and skills which will allow them, and the attitudes which will encourage them, to contribute to service and research activities and, more generally to efforts designed to clarify the appropriate role of formal education in American society.[6]

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[5] In this context it may be noted as Steffensen (1973) states that a competency-based program demands two major technologies. "The first of these is a systems design that permits the employment of a sophisticated management schema. Only through such a management plan can the program really be controlled, evaluated, and renewed. The second technology is the modularization of the instructional program. The individualization of the program has been made possible through the development of learning modules whose use permits self-pacing by the students and instructors."

While the above propositions and aims are stated in very general terms, they have been found to be helpful for our program. They emphasize that the person who enrolls in such a program is not just to be trained for technical competence, but is to be educated as a member of society and as a professional who has a unique role to play in that society. They are ambitious, but hopefully not unrealistic, for if they are it is probably also unrealistic to expect the graduates of such programs to function as professionals.

Specific Purpose

As stated above, another set of program guidelines is provided by the specific accepted purpose with reference to the type of personnel who are to be prepared and the population whom they will affect (see Table 2). For example, a program might be concerned with the preparation of consultant personnel who are to provide in-service training for regular

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[6] As Michael (1968) has emphasized, this ". . . will require commitment and the will and courage to trust, to experiment and to live with crises of conscience." (p. 120).

TABLE 2

Key Variations which Alter the Nature and Scope of the Abilities and the Level of Competence Required for Appropriate on the Job Performance

Variation in Population	Variation in Role	Variation in Function
The clients encountered may differ with regard to:	Positions may change as reflected by the following titles:	Responsibility can be categorized as involvement in efforts to systematically plan, implement, and evaluate programs for:
1. "Functional characteristics, e.g., pupils who are slow readers, mentally retarded; emotionally disturbed; teachers-in-training; administrators	1. Aide or Assistant	1. Direct service, e.g., instruction for pupils, resource finder for teachers and administrators, parent education
2. Age. e.g., preschool; elementary; higher education; working professionals	2. Regular teacher, e.g., elementary; secondary; reading; history; foreign language	2. Pre- and in-service personnel preparation, e.g., demonstration; academic output
3. Socio-economic, geographic, and/or ethnic status, e.g., lower income; rural; Mexican-American	3. Specialist teacher, e.g., for the Educable Mentally Retarded; for the emotionally disturbed	3. Advancement of the field, e.g., helping to resolve basic educational issues, development of prototype program models, diffusion of innovations
4. Number involved, e.g., small group; large class	4. Professor	
	5. Resource teacher	
	6. Change Agent	
	7. Counselor	
	8. Consultant	
	9. Supervisor	
	10. Administrator	
	11. Curriculum Developer	
	12. Evaluator	
	13. Researcher	

elementary classroom teachers so that such teachers will be better prepared to cope with pupils' learning/behavior problems. In such an instance, the development of the program should be guided by an awareness of the knowledge, skills, and attitudes that are needed in order to perform the various functions assumed by such personnel. Specifically, what is needed is the identification of the learnable components of effective teaching. Unfortunately, identifying such components has proven to be a most vexing problem for researchers (Gage, 1972). A concomitant problem is that of designating the minimal level of competence which is acceptable for performing a given function or set of functions. Although many lists of job requirements have been generated, satisfactory solutions for the above problems have not resulted. What is needed is not ad hoc itemizing of "competencies," but systematic conceptualizations and empirical investigations of what is required for successful performance of various school roles and functions with differing populations. Without such work being done, systematic efforts to plan, implement, and evaluate pre- and in-service programs for educational personnel will continue to be handicapped. (Also handicapped will be efforts to establish competency-based procedures for certifying those individuals who successfully complete such programs.)

Table 2 is an attempt to summarize key variations in pupil population and in personnel role and function which are viewed as altering the nature and scope of the abilities required and the level of minimal competence needed to perform appropriately on the job. Thus, for any given role (e.g., teacher), parameters relating to changes in pupil population and assigned functions are viewed as resulting in differing on-the-job demands. However, as this writer has suggested elsewhere (Adelman, 1972e), many variations in on-the-job demands may *not* require *substantively new, general abilities*, but only require an increase in level of competence. For example, a teacher in a classroom which contains youngsters who manifest severe learning and performance handicaps, i.e., special education classrooms, as contrasted with a teacher who does not have such youngsters, probably needs a higher level of competence in certain areas--but not substantively different, general abilities--to perform acceptably. (This is not to say that (s)he won't need to learn some new, *specific* procedures.) The same view is held with reference to teachers who assume many resource, consultant, or supervisory roles, e.g., they will need to increase their level of competence rather than only develop substantively new, general abilities.

Knowledge Base

A third set of guidelines for program development is *derived* from the accumulated theoretical and practical knowledge regarding:

1) growth and development (with emphasis on the pertinent facets of sensory, perceptual, motoric, linguistic, cognitive, social, and emotional development);

2) learning and performance;

3) motivation;

4) instructional content and process;

5) assessment, evaluation, and research processes;

6) system ecology (Note: This term is used to encompass what is known about [a] the significance and mechanics of interacting with and utilizing others within as well as outside of the school system, [b] the

role of behavior settings in shaping such interactions, and [c] the administration of behavior settings);

7) the growing field of education.

From such knowledge must be culled that which is pertinent with regard to the personnel to be prepared and the student population to be affected. In doing such selecting, it also is important to refer back to the propositions and long-range aims of the program, e.g., the commitment to preparing personnel who not only can cope successfully with immediate job demands, but who also are interested in and capable of contributing to positive change.

Once an explicit and comprehensive program rationale is formulated, program planning can be initiated. Such planning, which consists of curricular, evaluational, administrative, and instructional phases, will be discussed in the next two chapters.

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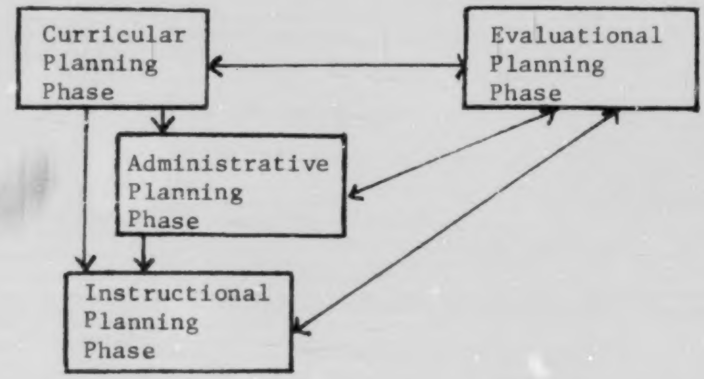
Chapter 3

Introduction to Program Planning

The complex nature and scope of program planning is not widely recognized. This is not to say that the topic has been ignored; rather, what seems clear is that it has been attended to only in very superficial ways by all but a few writers. In the following two chapters, an attempt is made to convey a sense of what is involved in program planning and its importance to the program's success or failure.

Formally defined, planning may be viewed as the task of "relating means to ends, formulating rationally feasible courses of action through systematic considerations of alternatives; planning may be unilateral or participatory in nature" (Hartley, 1968, p. 256). As Hartley (1968, p. 2) point out, "to some persons, planning conjures up the image of a totalitarian society embracing centrally planned economic objectives and activities. In this case, self-expression and human freedom may approach a kind of universal triviality. The requisite assumption for the use of economic models in education is that *some* planning is desirable; exactly how much is less clear." Hartley includes as aims of educational planning the formulation of general goals and instructional objectives, organization of relevant data, determination of personnel, space and material requirements, examination of alternative procedures and establishment of priorities, provision for communications and information retrieval for the system, analysis of financial resources, evaluation of how well objectives are being met, looking to the future, and continuous review of the system "to ensure that objectives are being reformulated and that the system is dynamic and innovative rather than static and rigid. If properly conducted, systematic planning can provide educators with a comparable basis for rational choice. It is a way of attempting somewhat to control the future instead of merely reacting to it and being controlled by it" (p. 3).[1]

As is represented in Figure 1 and reproduced below, we view program planning as consisting of four major phases--a curricular planning phase, an evaluational planning phase, an administrative planning phase, and an instructional planning phase.


Curricular Planning Phase
Evaluational Planning Phase
Administrative Planning Phase
Instructional Planning Phase

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[1] Two complementary statements regarding planning which are worth noting are: "Planning is an exercise in conflict management rather than only the sober application of technical rationality. Any real life planning process may be characterized as a stream of successive defeats and integrations." (Gross, 1965, p. 197); "Planning is not a process of speculating on probable developments and preparing a theoretical blueprint for meeting needs. Rather it is a process of attempting to determine appropriate goals and objectives, obtaining and analyzing pertinent information that will bring into focus present and emergent problems and needs, and obtaining agreement on steps and procedures that are designed to meet those needs so that objectives can be attained." (Morphet and Ryan, 1967, p. xiii).

It is during these planning phases that the program's general guidelines (rationale) are translated into a specific plan of organization and action. We now turn to a discussion of each of these planning phases. The focus in chapter 4 is on curriculum planning, while chapter 5 is devoted to a discussion of evaluational, administrative, and instructional planning.

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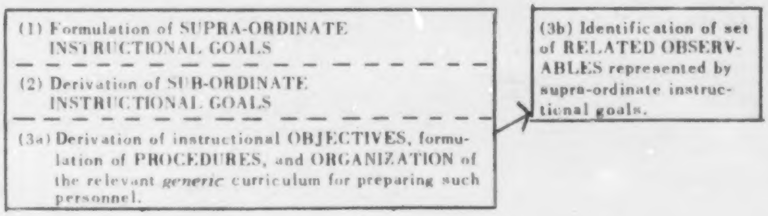
Chapter 4

Curricular Planning Phase[1]

As indicated in Figure 2, the major tasks of curricular planning are viewed as:


(1) Formulation of SUPRA-ORDINATE INSTRUCTIONAL GOALS
(2) Derivation of SUB-ORDINATE INSTRUCTIONAL GOALS
(3a) Derivation of instructional OBJECTIVES, formulation of PROCEDURES, and ORGANIZATION of the relevant *generic* curriculum for preparing such personnel.
(3b) Identification of set of RELATED OBSERVABLES represented by supra-ordinate instructional goals.

Stated in another form, the purpose of such curricular planning is to answer three questions. (1) What should be the general nature and scope of the program's instructional content? (2) What instructional procedures should be used so that this content can be taught purposively and appropriately? (3) How should the curriculum be organized?

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[1] The reader who is unfamiliar with the literature on curriculum development will find Louise Tyler's A Selected Guide to Curriculum Literature: An Annotated Bibliography an excellent starting point. In addition to annotated references, Tyler presents a systematic conceptualization of this area of study and a critical analysis of the references which are presented. Two sources published after the Tyler work was prepared which may be of interest are the 1971 NSSE yearbook entitled The Curriculum: Retrospect and Prospect, and the ASCD publication entitled The Unstudied Curriculum: Its Impact on Children. And with specific reference to competency-based personnel preparation, there is A systems approach to program design which is book 2 in J.M. Cooper, M. Vere DeVault, et al., Competency based teacher education. Berkeley: McCutchan Publ. Corp., 1973. Other references are provided in the resource guide regarding instructional planning (Carpenter and Hull, 1973), a companion work to this monograph.

Instructional Content

As has been implied in chapter 2, the accepted purpose of the program is a major starting point for efforts to specify instructional content. For example, the purpose of our particular program has been to prepare teachers to assume a change agent (resource) role in school districts, particularly with reference to providing better educational opportunities for pupils with learning and behavior problems. Given this purpose and using the conceptualization of the process of systematic instruction presented in a preceding chapter (see Figures 1 and 2) two supra-ordinate goals have been established for our program. Each program participant is to acquire the ability and desire to plan, implement, and evaluate systematically (1) a regular classroom instructional program which will improve the educational opportunities both of pupils in the general population and pupils with learning/behavior problems and (2) a program which results in the widespread adoption of such a classroom program. (The specific reasoning behind the formulation of these particular goals is unimportant to the present discussion; they are presented only as an example which can help to clarify the general role such goals play.) The developers of a program designed to train personnel for other roles and functions, of course, would begin with a different set of supra-ordinate goals.

For purposes of deriving instructional content, such supra-ordinate goals can be viewed as high order (highly abstract) constructs, each of which consists of a large set of related observables.[2] It is such supra-ordinate goals (constructs) which must be divided into sub-ordinate goals and subsequently into instructional objectives. And, it is such supra-ordinate goals which are the ultimate referents in efforts designed to determine whether a training program is achieving intended outcomes.

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[2] This view of constructs is based on the conceptualization presented by Nunnally (1967).

Given that each supra-ordinate goal consists of a large set of related observables, one approach to planning instructional content is that of (a) specifying as completely as is feasible the observables encompassed by each goal-construct, (b) grouping these observables into appropriate sub-sets encompassing one or more such observables, and then (c) descriptively labeling the subsets.

A second approach, and the one we used initially, is to begin by dividing each supra-ordinate goal into rationally formulated sub-goals. We designate such sub-goals as major areas for instructional focus in preparing personnel, and we categorize each area with reference to the populations to be affected. Specifically, we have derived eight areas from each of our supra-ordinate goals with reference to affecting both pupils and other education personnel. These eight areas include a focus on (1) program rationales, (2) curricular planning, (3) evaluational planning, (4) administrative planning, (5) instructional planning, (6) program implementation, (7) program evaluation, and (8) "tools" needed to help advance the field.[3] Based on our previous experiences, an additional, preliminary area has been added, i.e., a focus on "tools" needed for learning what is taught in the program itself.[4] Such sub-goals, of course, represent rather large sub-sets of the original goal-constructs, and consequently, still represent a relatively high level of abstraction. To further identify the component parts of the original goals and to reduce the level of abstraction, we have taken each area for instructional focus and rationally derived major sub-areas (see Table 3). The next step in this process of identifying component parts and reducing abstraction level is that of outlining to the next (fourth) level down, and so forth. The two approaches described above can and should be continued until the set of related observables encompassed by the program's goal-constructs is as completely identified as is necessary for purposes of systematic planning, implementation, and evaluation of the program. (Complete identification implies that there is also widespread agreement on the validity of the set.)

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[3] It should be noted that these areas of instructional focus reflect the process of planning, implementing, and evaluating an educational program (see Figure 1) and illustrate the point made in chapter 2 that systematic instruction is the central concern with reference to both the content and process of such a program.

Concomitantly, in our work, we categorize these area sub-divisions with reference to the type of instructional focus involved, namely, whether the focus is on acquiring (1) facts, (2) concepts, (3) skills,

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[4] As I have indicated elsewhere (Adelman, 1972a), in planning program content, one must consider what is required for success in the program itself. For example, there may be skills needed for successful learning and performance in the preparation program which are not essential to successful performance in a given professional role. Thus, a systematic analysis of what is required for successful completion of the program is needed in order to (1) reform the curriculum, (2) improve selection procedures, and (3) plan early corrective action to improve the participants' chances of success.

TABLE 3

Major Sub-Areas for Instructional Focus

I. Tools Needed for Learning and Performing in the Program
  A. Procedures for Inquiry
    1. Reasoning
    2. Critical Reading
    3. Listening
    4. Learning and Performing Independently and Cooperatively Using Self-evaluative Feedback
  B. Procedures for Task-Oriented Communication (Sending and Receiving Messages)
    1. Non-verbal and Verbal Informative (Body Language; Written and Oral Language)
    2. Non-verbal and Verbal Interactive (Particularly Helping Relationships and Problem Solving)
  C. Survey of Major Concerns Confronting the Field of Education
    1. Programmatic
    2. Population
    3. Evaluative

II. Program Rationale
  A. Purpose of Educational Programs
    1. Socio-Political-Economic
    2. Learner Self-actualization
  B. Forces Which Shape the Educational System
    1. Socio-Political-Economic
    2. Ideological
  C. Body of Theoretical and Empirical Knowledge Upon Which Programs Should Be Based
    1. Growth and Development
    2. Learning and Performance
    3. Motivation
    4. Instructional Content and Process
    5. Assessment, Evaluation and Research Processes
    6. System Ecology
    7. The Growing Field of Education

III. Curricular Planning
  A. Evolution of Relevant Generic Curriculum
    1. Instructional Content
    2. Instructional Objectives
    3. Instructional Procedures
    4. Curriculum Organization
  B. Identification of Relevant Observable Behaviors
    1. Relationship Between Observables
    2. Implications for Program Planning, Implementation, and Evaluation

IV. Administrative Planning
  A. Formulation of Non-Curricular Goals, Objectives, and Procedures
    1. Administrative
    2. Research
    3. In-service Training
    4. Public Service

- B. Identification of Relevant Observable Behaviors
    - 1. Relationship Between Observables
    - 2. Implications for Program Planning, Implementation, and Evaluation
- C. Identification of Available Resources, Organizational Alternatives, and the Population to be Served
    - 1. Techniques for Analyzing Resources
    - 2. Implications of Resource Availability for Recruitment, Selection and Admission of Program Candidates
    - 3. Principles and Practices of Administrative Organization
- D. Decision Making Regarding Dispersal of Population and Resources and Scheduling
    - 1. Recruitment, Selection, Admission, and Dispersal of Population
    - 2. Deployment of Resources
    - 3. Continuous Monitoring of Resource Use
    - 4. Scheduling Relevant Program Planning, Implementation, and Evaluational Activities

V. Evaluational Planning
- A. Formulation of Relevant Instructional or Non-Curricular Evaluation Procedures
    - 1. Identification of Available Procedures
    - 2. Adoption or Adaptation of Available Resources
    - 3. Development of New Procedures
- B. Specificity of Evaluation Procedures
    - 1. Generic
    - 2. Program Specific

VI. Instructional Planning
- A. Modification of Relevant Generic Curriculum to Accommodate the Specific Groups to be Served
    - 1. Broad Band Assessment
    - 2. Evolution of Instructional Objectives, Procedures, and Organization for Specific Groups
- B. Modification of the Group Plan to Accommodate Individuals
    - 1. Narrow Band Assessment
    - 2. Evolution of Instructional Objectives, Procedures, and Organization for Specific Individuals

VII. Program Implementation
- A. Initiation of Planned Program
    - 1. Facilitating Activation of Participants
    - 2. Facilitating Focused Behavior
    - 3. Facilitating Initiation of Activity
    - 4. Facilitating Maintenance of Participation
    - 5. Facilitating Appropriate Communication Between Participants Regarding Results
    - 6. Strengthening Learning and Performance Patterns
- B. Formative Evaluation
    - 1. Description of Instructional and Non-Curricular Antecedents, Transactions, and Outcomes
    - 2. Judgement of Instructional and Non-curricular Antecedents, Transactions, and Outcomes
    - 3. Decision Making

- C. Modification of Planned Program
  - 1. Modification of Instructional Objectives, Procedures, and Organization
  - 2. Modification of Non-curricular Objectives and Procedures
- D. Ongoing Management of Program
  - 1. Materials
  - 2. Methods
  - 3. Behavior Settings

VIII. Program Evaluation
- A. Description
  - 1. Identification of Intended Antecedents, Transactions, and Outcomes
  - 2. Measurement of Anticipated (Intended) Antecedents, Transactions, and Outcomes
  - 3. Identification and Measurement of Unanticipated Outcomes
- B. Identification of Standards
  - 1. Absolute (Criterion Referenced)
  - 2. Relative (Norm Referenced)
- C. Judgements and Decision Making
  - 1. Derivation of Implications Based on Judgements of Intended and Actual Antecedents, Transactions, and Outcomes
  - 2. Derivation of Implications Based on Judgements of Unanticipated Outcomes
  - 3. Initiation of Action

IX. "Tools" Needed to Help Advance the Field
- A. Methods for Inquiry
  - 1. Purpose of Educational Inquiry
  - 2. Types of Methodological Activity
- B. Planning and Implementation of Activities for Inquiry
  - 1. Designing Internally Valid Inquiries
  - 2. Special Techniques for Specific Activities
  - 3. Derivation of Externally Valid Implications
- C. Development and Diffusion of Prototype Program Models
  - 1. Development of Feasible Prototypes
  - 2. Dissemination, Installation and Maintenance of New Programs

(4) behaviors, and/or (5) attitudes. While these five "types" obviously could be subsumed under the rubrics cognitive, psychomotor, and affective domains, we have found it more comfortable to work with the five categories named above. Whatever terms are used, however, the important point for emphasis is that such all-inclusive terms as "knowledge" and even the phrase "knowledge and skills" tend to mask the full nature of the content which merits instructional focus.

The matrix we have evolved as part of our conceptual framework for generating the instructional content of any program designed to prepare such educational personnel as teachers, supervisors, consultants, and instructional "resource" professionals is presented in Figure 3. Potentially, each cell of the matrix represents a segment of such a program's content which can be evolved into sets of instructional objectives. Some key sources of information for generating the instructional content are the variety of resources to be found in the library or which are available directly from public and private organizations, as well as those which can be generated through personal contacts and investigations (see Table 4 and Appendix III).

At this point in the discussion, it is worth emphasizing that regardless of the approach used in evolving instructional content any specification and grouping of the observables encompassed by a goal-construct essentially constitutes a theory regarding how such observables relate to one another. For every program of systematic instruction, then, such theory is a primary basis for all subsequent program planning,

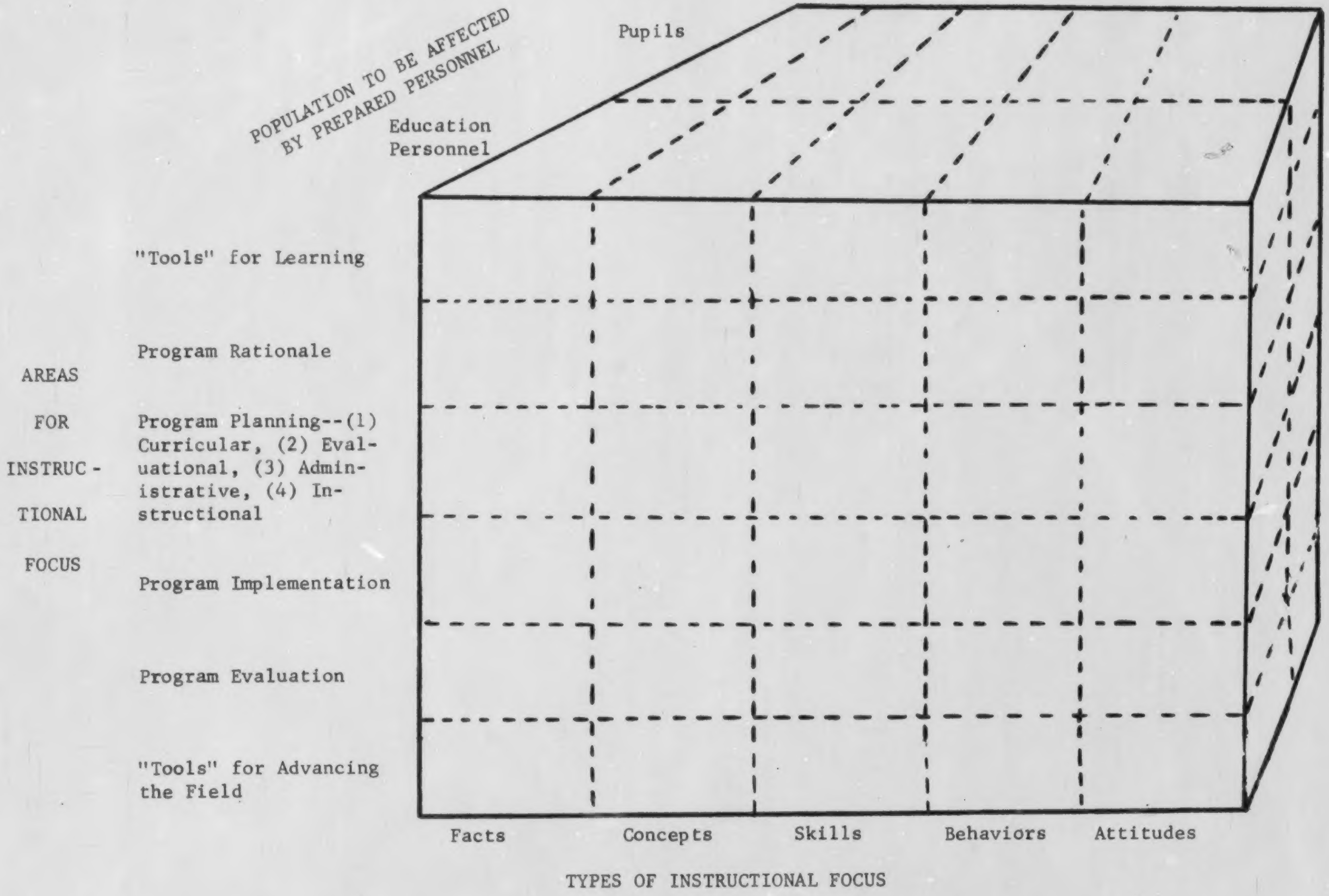
POPULATION TO BE AFFECTED BY PREPARED PERSONNEL
Pupils
Education Personnel
AREAS FOR INSTRUCTIONAL FOCUS
"Tools" for Learning
Program Rationale
Program Planning--(1) Curricular, (2) Evaluational, (3) Administrative, (4) Instructional
Program Implementation
Program Evaluation
"Tools" for Advancing the Field
Facts
Concepts
Skills
Behaviors
Attitudes
TYPES OF INSTRUCTIONAL FOCUS

Figure 3. A Matrix used in Generating Instructional Content for Programs Designed to Prepare Such Educational Personnel as (1) Teachers, (2) Supervisors, (3) Consultants, and (4) Instructional Resource Professionals

TABLE 4*

Sources of Information and Materials

LIBRARY

I. General Guides to Information Resources

II. Books, Project Reports, and Dissertation Abstracts

III. Journals

IV. ERIC Materials

V. Instructional Aids References

VI. Yearbooks, Handbooks and Guides

VII. Other Government Publications

PUBLIC AND PRIVATE ORGANIZATIONS

(International, national, regional, state and local)

I. Regional Educational Centers and Laboratories

II. Governmental Educational Agencies (NIE, USOE, State Depts., LEA's)

III. Educational Associations, Organizations, Institutes and Consortiums

IV. Commercial Companies

PERSONAL CONTACTS AND INVESTIGATIONS

I. Direct Communication with Experts, Supervisors, Co-workers, Consumers (written or oral)

II. Attendance at Workshops and Conferences

III. Personally Initiated Theoretical and Empirical Investigations and Analyses implementation, and evaluation. From this perspective, the problem of developing better instructional objectives is viewed as involving theory building as well as empirical identification of what is required for successful performance of various school roles and functions with differing populations.

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* An expanded version of the outline presented here is offered in Appendix III.

As is suggested above, the matrix presented in Figure 3 is very useful in shaping the nature of the instructional content of our program. In limiting the scope of program content, we are concerned primarily with two major dimensions. One dimension encompasses the timing for instructional focus; the second encompasses the degree of mastery and/or involvement to be achieved by the program participants. The former is concerned with matters such as the patterning, sequencing, and duration of instruction. The latter is concerned with the level to be attained with reference to each instructional objective which has been evolved. That is, given continua ranging from low to high levels of cognition, performance ability, and attitudinal involvement, what levels are to be attained? The final answer to this question, of course, must reflect the level of competence that will be acceptable in performing a given job function or set of job functions--thereby, once again, emphasizing the importance of evolving specific knowledge of on-the-job requirements.[5]

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[5] While no effort is made here to distinguish between pre- and in-service education, it should be clear that pre-service can and does only attempt to develop the minimal level of competence which is acceptable for performing on the job. It also should be reemphasized that the minimal level of competence which is needed by educators varies qualitatively and quantitatively with the type of pupil population served and the type of professional role and function which an individual has been assigned (see Table 2). Thus, for example, with reference to teachers, minimal competence can be categorized for several levels. The first level

At this time, in determining whether satisfactory levels of competence have been attained to warrant certification, a reasonable strategy seems to be that of evaluating at appropriate times complex, major behavioral outcomes, e.g., the instructional plan for a given day, a total day of instruction, a critique of a research article, and so forth. In judging the adequacy of such behavior, I am afraid we will have to rely on a combination of expert judgement and relative comparisons (e.g., among the program participants) until we finally establish, empirically, some appropriate standards.

Ultimately both the nature and the scope of instruction are limited by the decision making process which leads to the adoption of certain instructional objectives and the rejection of others. Decision making as to what constitutes an appropriate instructional objective, of course, is a complex task. It involves the application of criteria for judging

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encompasses the performance required of a teacher in a regular classroom which does not contain youngsters who manifest severe learning and performance handicaps. Once minimal competence has been developed at this level, additional competence is needed if the teacher is to function at an appropriate (albeit minimal) level of competence in a classroom which contains youngsters with severe learning and behavior problems. And most teachers (general and special) who are to consult with and supervise others in the school will need to acquire additional competence before they will be able to perform such functions at least at a minimal level of competence. Ideally, then, by the end of pre-service education, an individual will have acquired at least the minimal level of competence needed for acceptable performance with reference to the role and functions which have been assigned. The primary purpose of in-service education is to increase an individual's level of competence with reference to current role and functions, i.e., to facilitate the educator's achievement of the highest level of competence attainable by him.

(1) the "power" (usefulness) of what is to be learned--this includes questions of construct validity and content generality--and (2) the "economic" feasibility of what is to be taught--this includes consideration of (a) the total number and level of objectives to be accomplished using a given amount of time, space, teacher competence, etc., and (b) the characteristics of the individual to be instructed.

Objectives which are both potentially powerful and economical generally will encompass more than one observable behavior and will be stated at a somewhat low level of specificity. (The lower the level of specificity, the higher the level of abstraction.) From this perspective then, the argument that all instructional objectives should be stated with a high degree of specificity is seen as fallacious. What is important is that the observables encompassed by an instructional objective be identified and understood. (See Figure 2 and note that in the curricular planning phase after relevant generic instructional objectives and procedures are evolved there is still the task of identifying the set of related observables represented by the supra-ordinate goals.) Indeed, it should be reemphasized that instructional objectives should be stated with a low level of specificity (a) whenever it is more economical to teach at a low level of specificity because of the likelihood of good transfer of training, e.g., whenever the "whole" (a general principle) can be taught appropriately instead of having to teach each separate part (each specific case), and (b) in many instances when only a low level of mastery and/or involvement is to be attained, e.g., teaching teachers about curriculum theory. Furthermore, instructional objectives will be stated at a low level of specificity whenever the set of related observables represented by the program goals are not very well identified or agreed upon.[6]

Ideally, every component encompassed by an instructional objective should be identified even when such objectives are fairly abstract. However, this frequently will not be the case. As a result, systematic efforts designed to plan, implement, and evaluate programs must settle for being less than ideal, at least for the present. For example, when many of the specific components of an instructional objective are not known, such objectives will be imprecisely understood and subject to varying interpretations thereby producing undesired variations in program outcomes. In addition, the lack of knowledge regarding such components has a negative effect on program evaluation efforts by hindering the process of sampling what program participants have been learning.

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[6] It should be noted that in the literature on the use of objectives in curricular and instructional planning some writers distinguish between general, terminal and enabling objectives, each of which is seen as serving a different purpose. Ammerman and Melching (1966) state: "The general objectives consist of statements of general performance, such as jobs, duties, functions, or other activities that incorporate more than one meaningful unit of performance. . . . They are useful as very brief descriptors of the instructional objectives, but they are too general to be meaningful and useful in designing learning experiences" (p. 76 in Merrill, 1971). "A meaningful unit of performance is an activity that would be done in its own right in the intended work situation. . . . Student performance objectives in which the student action is stated at the level of a meaningful unit of performance are called terminal objectives. . . . After the terminal student performance objectives have been established, the next activity is directed at determining what the student needs to learn; that is, to determining the enabling objectives. . . the component actions, knowledges, skills, and so forth, the student must learn if he is to attain the terminal objectives" (p. 75 in Merrill, 1971).

The above discussion should not be interpreted as an argument for limiting programs to instructional objectives for which all components are known. To the contrary, as has been stated above, given our current state of knowledge, in all areas for instructional focus many important components are poorly understood or are not readily observed (measured), and thus instructional objectives which are intended to encompass these components can only be formulated at a rather high level of abstraction and ambiguity.[7]

The organization of content for purposes of instruction is discussed in a subsequent section of this chapter. In anticipation of that discussion, it should be noted here that instruction is not always organized around a given instructional objective. Frequently, instruction is better facilitated by grouping a number of instructional objectives under one or more organizing topics.

Instructional Procedures

Once a set of generic instructional objectives have been evolved, the focus of curricular planning shifts to the problem of establishing a set of *generic* instructional procedures which can facilitate the acquisition of the objectives by the program participants. Such procedures may be thought of in terms of what the instructor does in order to facilitate the program participants' involvement in appropriate experiences. As indicated in Figure 4, (a) the instructor's procedural concerns can be categorized as involving methods, materials, and behavior settings, and (b) the program participant's involvement can be categorized as academic stimulation, practice, and communication-oriented experiences.

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[7] Appendix III and the resource guide regarding instructional planning (Carpenter and Hull, 1973) which was prepared as a companion work for this monograph provide references to a sampling of the listings of objectives which currently are available. Obviously, our view is that such listings should not simply be adopted but should be used as a resource for deriving instructional content.

With reference to these categories of procedures and experiences, such questions arise as: What methods and materials should a program participant experience? Where and how long should these methods and materials be experienced? What population(s) should be focused on? Who should be involved in facilitating the instructional process? These questions serve as a general framework for the discussion which follows.

The answers to these questions require: (1) the identification of a variety of potentially useful procedures (and, where necessary, an indication of how to locate and use such procedures); and (2) the selection of those procedures which can appropriately facilitate the acquisition by the participants of the program's instructional objectives (see Figure 5). (The selection of procedures involves the assessment of time, cost, and performance demands for alternative procedures--followed by the elimination of procedures which are inappropriate because such demands are unrealistic or unfeasible at the present time.) Given the sequential nature of these planning activities, we will approach the above questions first with reference to the way in which potentially useful procedures can be identified (i.e., typed and located); then, we will discuss briefly the selection of appropriate procedures.

		TYPES OF PARTICIPANT EXPERIENCES		
		Academic Stimulation Experiences	Practice Experiences	Communication-Oriented Experiences
INSTRUCTOR'S PROCEDURAL CONCERNS	Methods			
	Materials			
	Behavior Settings			

Figure 4. Instructor's Procedural Concerns With Reference to the Types of Experiences in Which Participants will be Involved.

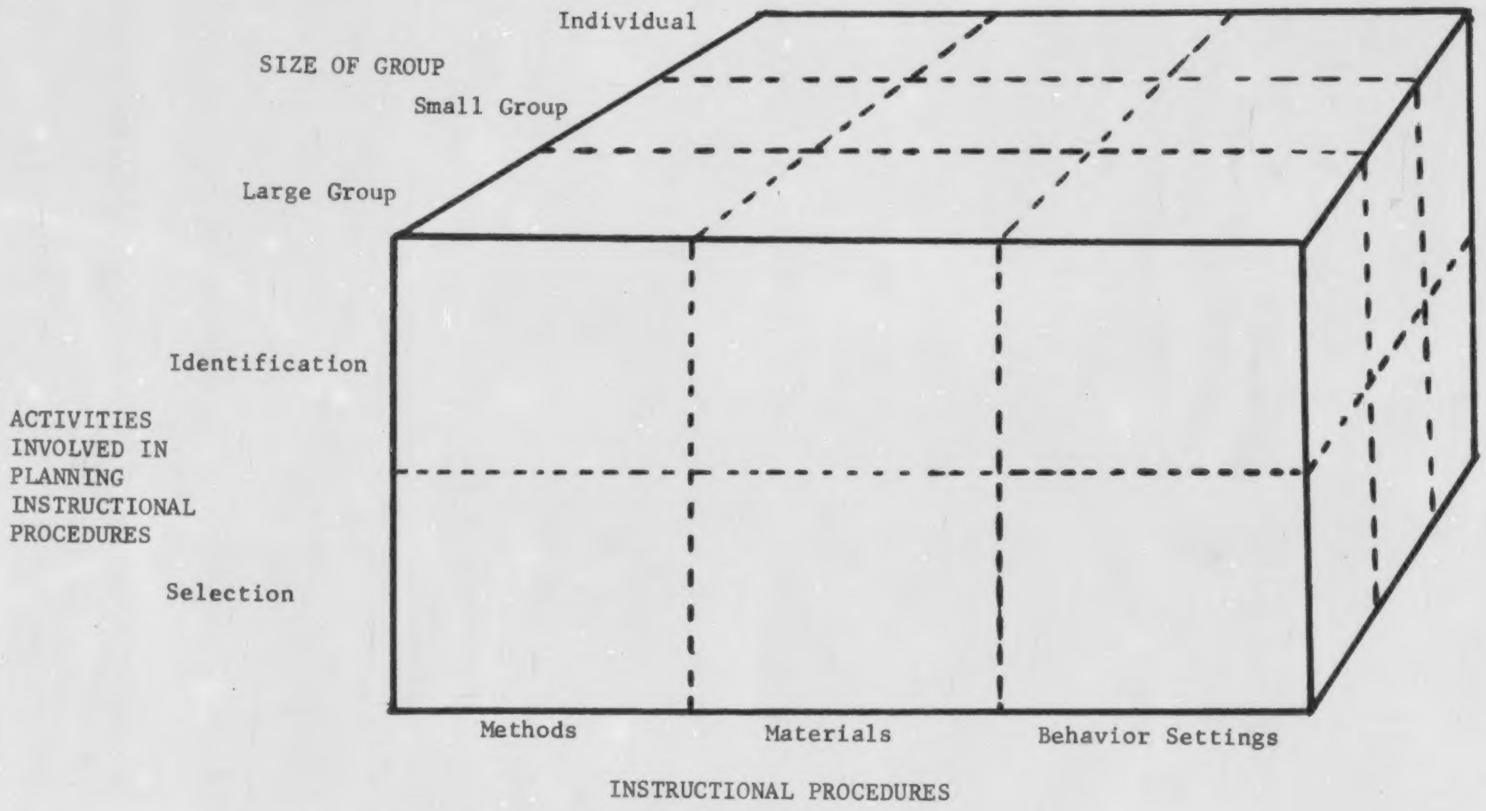
Individual
SIZE OF GROUP
Small Group
Large Group
Identification
ACTIVITIES
INVOLVED IN
PLANNING
INSTRUCTIONAL
PROCEDURES
Selection
Methods
Materials
Behavior Settings
INSTRUCTIONAL PROCEDURES

Figure 5. Some Key Factors Related to Planning Instructional Procedures

Turning now to the first question (What methods and materials should a program participant experience?): It is well to begin by noting a basic assumption about methods and materials suggested by McNeil (1965). He states that any method or material "can be used to further a variety of purposes," and that "subject matter does not lie in the object and event, but in the thought processes and methods stimulated by these artifacts. . . . that is not to say that all materials and events are equally appropriate in the stimulation of desired reactions. Some are far more rich in that they give rise to more interpretations and responses of a particular kind." (See Table 4 and Appendix III for general sources of information regarding instructional procedures.)

Methods. In discussing methods, it is helpful to differentiate between (a) "models of teaching", (b) activities, and (c) specific techniques. Joyce and Weil (1972a) describe a model of teaching as "a pattern or plan, which can be used to shape a curriculum or course, to select instructional materials, and to guide a teacher's actions" (p. 3). The model used by an instructor has "...much to say about the kinds of realities which will be admitted to the classroom and the kinds of life-view which are likely to be generated as teacher and learner work together" (p. 3). Joyce and Weil (1972a) have attempted to identify and group various models of teaching and have suggested that there are four families of models representing "different orientations toward man and his universe." These are: "(1) those oriented toward social relations and toward the relation between man and his culture and which draw upon social sources;

(2) those which draw on information processing systems and descriptions of human capacity for processing information; (3) those which draw on personality development, the processes of personal construction of reality, and the capacity to function as an integrated personality as the major source; (4) those developed from an analysis of the processes by which human behavior is shaped and reinforced" (p. 8). (The authors caution that these families of models are not antithetical to each other, i.e., there is overlap among and within the families.) Table 5 is reproduced from Joyce and Weil (1972a); it is an annotated listing of the example models included in their book. It will be noted that the theorists presented in Table 5 have developed their approaches for use in elementary and secondary schools; it is easy to see, however, that the various models are applicable for instructing professional personnel. It also should be noted that some models are more prescriptive than others with reference to the types of activities and techniques which are likely to be emphasized. For example, the laboratory method model (Number 10 in Table 5) is likely to prescribe an activity which involves group verbal interaction rather than a traditional lecture; the operant conditioning model is likely to emphasize such techniques as contingency management rather than group discussion techniques.

Joyce and Weil have provided a stimulating way of looking at a key aspect of the instructional process; in doing so, they have helped to identify a useful set of models for use in planning instructional procedures. However, it should be emphasized, as Joyce and Weil do, that the models identified provide only a "present state of the art

TABLE 5.

Joyce and Weil's Tabular Presentation of the Models of Teaching Classified by Family and Mission[*]

Model	Major Theorist	Family or Orientation	Missions or Goals for which Applicable
1. Inductive Teaching Model	Hilda Taba	Information Processing	Primarily for development of inductive mental processes and academic reasoning or theory-building, but these capacities are useful for personal and social goals as well.
2. Inquiry Training Model	Richard Suchman	Information Processing	
3. Science Inquiry Model	Joseph J. Schwab (also much of the Curriculum Reform Movement; see Jerome Bruner, *The Process of Education* for the rationale)	Information Processing	Designed to teach the research system of the discipline but also expected to have effects in other domains (i.e., sociological methods may be taught in order to increase social understanding and social problem-solving).
4. Jurisprudential Teaching Model	Donald Oliver and James P. Shaver	Social Interaction	Designed primarily to teach the jurisprudential frame of reference as a way of processing information but also as a way of thinking about and resolving social issues.
5. Concept Attainment Model	Jerome Bruner	Information Processing	Designed primarily to develop inductive reasoning.
6. Developmental Model	Jean Piaget, Irving Sigel, Edmund Sullivan	Information Processing	Designed to increase general intellectual development, especially logical reasoning, but can be applied to social and moral development as well. (See Kohlberg.)

[*] Bruce Joyce and Marsha Weil, *Models of Teaching*, (C) 1972, pp. 11-13. Reprinted by permission of Prentice-Hall, Inc., Englewood Cliffs, New Jersey.

TABLE 5.

Models of Teaching (continued)

Model	Major Theorist	Family or Orientation	Missions or Goals for which Applicable
7. Advance Organizer Model	David Ausubel	Information Processing	Designed to increase the efficiency of information-processing capacities to meaningfully absorb and relate bodies of knowledge.
8. Group Investigation Model	Herbert Thelen John Dewey	Social Interaction	Development of skills for participation in democratic social process through combined emphasis on interpersonal and social (group) skills and academic inquiry. Aspects of personal development are important outgrowths of this model.
9. Social Inquiry Model	Byron Massialas Benjamin Cox	Social Interaction	Social problem-solving primarily through academic inquiry and logical reasoning.
10. Laboratory Method Model	National Training Laboratory (NTL)--Bethel, Maine	Social Interaction	Development of interpersonal and group skills and through this, personal awareness and flexibility.
11. Non-Directive Teaching Model	Carl Rogers	Person	Emphasis on building capacity for self-instruction and through this, personal development in terms of self-understanding, self-discovery, and self-concept.
12. Classroom Meeting Model	William Glasser	Person	Development of self-understanding and self-responsibility. This would have latent benefits to other kinds of functioning, i.e., social.

TABLE 5.

Models of Teaching (continued)

Model	Major Theorist	Family or Orientation	Missions or Goals for which Applicable
13. Awareness Training Model	William Schutz Fritz Perls	Person	Increasing personal capacity for self-exploration and self-awareness. Much emphasis on development of interpersonal awareness and understanding.
14. Synectics Model	William Gordon	Person	Personal development of creativity and creative problem-solving.
15. Conceptual Systems Model	David E. Hunt	Person	Designed to increase personal complexity and flexibility. Matches environments to students.
16. Operant Conditioning Model	B.F. Skinner	Behavior Modification	General applicability. A domain-free approach though probably most applicable to information-processing function.

repertoire" which creative educators should use as starting points for creating other models.[8]

As indicated above, besides models of teaching, the term "method" encompasses a variety of activities in which the student may participate alone or in interaction with other students and/or with instructors. Such activities may or may not be prescribed by a particular model of teaching. The basic types of activities can be categorized as follows:

(1) academic stimulation experiences--such as lectures, seminars, observations or actual and simulated teaching, audio-visual presentations, programmed instruction with or without computer aid, individual study courses, related reading and writing activities (including tests);

(2) practice experiences--actual and simulated participatory experiences, such as micro-labs, student teaching, internships, research assistantships;

(3) communication-oriented experiences--Although not always discussed as such, meetings and other types of group activities have become another basic set of activities to be considered in program planning. Such activities range from informational meetings to encounter groups. Ideally, such activities are designed to facilitate professional and personal growth and development through increased awareness and understanding which is felt to be the product of a greater interchange among program participants and/or between participants and their

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[8] Also of interest in this context may be an earlier work by J.R. Verduin, Jr., entitled Conceptual models in teacher education. Washington: American Association of Colleges for Teacher Education, 1967.

instructors and supervisors.[9]

The most detailed listings of activities can be found in the literature on methodologies for classroom teaching.[10] Again, it does not require much imagination to extract and generalize appropriate curriculum activities for personnel preparation programs. (And, of course, since instructional activities are an important area of instructional focus, such listings can be included as part of the program's instructional content.) Burton (1962) reviews some of the literature on activities including discussion of Diedrich's grouping scheme. Diedrich (1936) lists approximately 177 activities organized into the following eight groupings: visual, oral, listening, writing, drawing, motor, mental, emotional. Darrow and Van Allen (1961) discuss and group activities which students can do independently. They organize these independent activities into four groups: searching, organizing, originating, and communicating. Means (1968) deals with activities (as well as techniques and media) under the general rubric of methodology and organizes them as group, dramatic, student-oriented, teacher-initiated, material-focused, and equipment-centered. Other sources of such activity descriptions and groups include: Whipple (reported in Burton, 1962); Hyman (1970); Hough and Duncan (1970); Joyce and Weil (1972a). The literature on personnel preparation also provides some description of activities, e.g., Allen and Ryan (1969); Borg, Kelley, Langer, and Gall (1970); Rudman (1972). Also, it should be noted that additional references can be found in chapters 6 and 8 of a companion monograph to this work (Adelman, 1973) and in the companion resource guide regarding instructional planning (Carpenter and Hull, 1973).[11]

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[9] Other writers have differentiated activities into initiating, ongoing, and culminating or into input and output categories. A sampling of other ways of categorizing activities can be found in the accompanying resource guide regarding instructional planning.

[10] Assessment activities are dealt with elsewhere in this monograph and in the accompanying resource guides on instructional planning and program evaluation.

As should be evident, the particular organizational grouping is not as important as the knowledge of the variety of activities which might be used appropriately in planning a curriculum.

Finally, methods require the use of specific techniques, i.e., building certain specific characteristics into the stimulus, response, and feedback facets of an activity. For instance, in working with Glasser's classroom meeting model (which could appropriately be used in a personnel preparation program), the activity of meeting together for purposes of goal setting and evaluation requires skill with a variety of interpersonal and discussion techniques which can create a climate of openness and non-defensiveness while guiding the group towards accomplishing its purposes.

Again, it may be noted that detailed discussion of techniques may be found in the literature on methodologies for classroom teaching as well as in the literature on personnel preparation (see references cited above).

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[11] Also, see Structured practice in teaching: a bibliography of ERIC documents, compiled by Lorraine Poliakoff (ED 048 123). This bibliography covers published and unpublished documents and journal articles processed by the Clearinghouse on Teacher Education between July, 1968 and June, 1970.

In summary, in this section, methods have been differentiated into models of teaching, activities, and techniques and defined as follows:

Models of Teaching--"a pattern or plan, which can be used to shape a curriculum or course, to select instructional materials, and to guide a teacher's actions." The model used by an instructor has "...much to say about the kinds of realities which will be admitted to the classroom and the kinds of life-view which are likely to be generated as teacher and learner work together" (Joyce and Weil, 1972b, p. 3). It should be noted that some models are more prescriptive than others with reference to the types of activities and techniques which are to be employed.

Activities--specific types of experiences which a student can be involved in alone or with other students and/or with instructors, e.g., academic stimulation such as reading a book, practice such as teaching a child, communication oriented experiences such as group meetings. Such experiences may or may not be prescribed by a particular model.

Techniques--building certain specific characteristics into the stimulus, response, and feedback facets of an activity, e.g., use of varying combinations of sense modalities such as Fernald's tracing (AVKT) techniques for learning words; varying intensity, duration, patterning, cueing; requiring over responding; variations with reference to incentives and reinforcement such as contingency management.

Materials. In discussing instructional (including related assessment) materials, it is helpful to differentiate between the medium and the message. For example: Media include (a) machines, (b) prepared materials such as films, audio and visual recordings, packaged programs, textbooks, tests, and other verbal and graphic representations; (c) special apparatus and other real objects; and (d) the instructor and other resource people. The message is the instructional content which we have categorized in this presentation as being facts, concepts, skills, behaviors. and attitudes (see Figure 3). Again, it is noted that appropriate materials can be located through the library, organizations, and private companies (see Table 4 and Appendix III).

The literature on media is quite extensive. Two good resources for identifying (typing and locating) media and other guides to media are Gerlach and Ely (1971) and Joyce, Morine, Weil, and Wald (1971). The former resource provides an extensive discussion of media as it relates to instruction, explores the characteristics, advantages, limitations, sources of various media, and cites key references. The Joyce, et al., resource is designed specifically as an aid for competency-oriented teacher education programs. It encompasses a description and analysis of a variety of materials, which curriculum planners could incorporate into curriculum packages.[12]

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[12] It should be noted here that in the foundational thrusts for the structure and operation of the Bureau of Educational Personnel Development (USOE) and in the works produced by the committee on National Program Priorities in Teacher Education (e.g., Rosner, 1972) a distinction is made between "protocol materials" and "training materials". The former are defined as "instructional materials that lead to efficient mastery of concepts. The basis of the instructional materials are 'protocols', which are reproductions (audio-visual) of behavior that provide the means of learning concepts important in teaching and learning. . . . Mastery of the concepts (e.g., self-concept, reinforcement) in the protocol materials means development of the ability to identify the concepts in simulated or real life settings. . . to relate the concept to other

At times, the distinction between methods and materials and, indeed, between content and procedures tends to be too artificial. For example, with great relevance for this discussion and again anticipating the subsequent discussion of curriculum organization, several writers have identified a curricular concept called an organizing center. Such a center is "the theme, topic, problem, or project which gives immediate purpose and direction to the undertaking of a number of learning experiences. The popularity of an organizing center stems from the assumption that learning best occurs when the learner is confronted with a problematic situation. In the resolution of the problem, relevant information, methods, and details acquire significance. Further, the tension generated by the problem is believed to 'motivate' the learner" (McNeil, 1965, p. 79). (It should be remembered that the organizing center is only a focal point for facilitating learning with regard to specified instructional objectives, e.g., the program participants' completion of a project is of secondary importance to their learning the content represented by the instructional objective.)

Once decisions are made with reference to what methods and materials might be used to accomplish the generically formulated instructional objectives, the focus in curriculum planning turns to the questions which

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concepts; and to use the concept in interpreting behavior in teaching/learning contexts." In contrast, training materials are defined as "instructional materials which lead to efficient mastery of skills. They provide for the identification of skills, description of situations in which they are to be practiced, description of the performance the skills entail, and ways of giving feedback to student on his performance. (That is,) they enable the student: 1. to identify the skill (e.g., questioning, performing reinforcement operations, evaluating achievement) in use; 2. to perform the component parts of the skill; and 3. to exercise the skill under laboratory or simulated conditions."

involve decision making regarding the behavior settings, the length of time to be devoted to various experiences, and the population(s) to be focused upon. Generally speaking, (a) the behavior settings may vary in terms of organizational format for instruction (e.g., staffing pattern, student grouping), type, locale, and scope (e.g., public-private; school-community, degree of uniqueness; sparse-ample facilities and equipment; minimal-maximal availability and use) and climate (e.g., interpersonal, intrapersonal, physical)--see Table 6; (b) a participant's experiences may vary temporally from brief to extensive and from intermittent to continuous involvement;[13] and finally, (c) such experiences may be designed to expose participants to a variety of adult populations, e.g., teachers, consultants, other professionals, parents, etc., and to a variety of pupils, e.g., who are of different ages, who are considered exceptional children, and so forth. Specific decisions regarding these variables are made primarily with reference to the roles and functions for which the educational professional is being prepared (see Table 2).

Finally, the question arises as to who should be involved in facilitating the instructional process? (For purposes of this discussion, the individuals responsible for helping program participants acquire needed knowledge, skill, and attitudes are referred to as facilitators.) Decisions regarding who will have primary responsibility likely will vary with the locality. This is true for specific activities and for the program as a whole. In both cases, who has the responsibility is probably not as

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[13] It should be clear that, before completing the program, a participant will spend a large portion of time in the "field" (as contrasted to time spent in university or college classrooms).

TABLE 6

BEHAVIOR SETTINGS

Climate	Type, Locale, and Scope	Organizational Format
1. Interpersonal	1. Type and Locale (e.g., private-public; school setting--preschool to university; community setting; specific unique setting such as a preschool class for the orthopedically handicapped; general setting such as a regular public school classroom)	1. Student Grouping (e.g., individual study course, seminar, large lecture class; ability, interest, need, or random grouping)
2. Intrapersonal	2. Scope (e.g., sparse-ample facilities and equipment; minimal-maximal availability and use of facilities and equipment)	2. Staffing Pattern (e.g., horizontal or vertical teaming; use of aides, volunteers, tutors, specialists)
3. Physical		3. Structure (e.g., instructor-student- or joint-controlled; specified or open-ended transactions and outcomes; whether products are required or not)
		4. Supervision (e.g., comprehensive apprenticeship--self-evaluation; systematic ratings--off-the-cuff observations)

important as that someone has it, for it is that someone who must be certain that there is coordination and integration. With reference to the total program, the responsibility could be centered in one agency--e.g., an institution of higher education, or a school district, or it could be shared by several agencies.[14]

To this point, the discussion of planning instructional procedures primarily has focused on the topic of identifying potentially useful procedures. After such identification has been accomplished, the next major activity involves the selection of those procedures which appear to be most appropriate for achieving the generic instructional objectives. In doing such selection, Adelman (1972b) has suggested that the problem is first of all one of determining which procedures have the most potential for (a) attracting and focusing program participants on relevant stimuli; (b) initiating and maintaining appropriate participation; (c) producing appropriate communication between instructors and program participants regarding results; and (d) strengthening preceding learning and behavior patterns of program participants and instructors. Given two procedures which are of equal potential with regard to such criteria, selection would be based on the procedure's likelihood of producing "side effects". That is, if one of the procedures not only produces the desired instructional outcomes, but also produces undesired side effects, it would not be given preference. In contrast, a procedure which produces both the desired outcome and other positive outcomes (or reinforces the desired outcome) would be strongly favored.

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[14] Attempts to solve this problem are reflected in the various models which are being suggested as viable alternatives to current teacher education programs. As examples: see Stone (1969) for a discussion of the Education Professions Institute (EPI) model which he proposes as a separate agency of higher education specifically devoted to providing professional training for teachers-to-be, teacher aides, associate teachers, intern teachers, regular teachers, master teachers, and teachers of teachers; also see Collins (1970) for a discussion of the Teacher Education Center concept which he feels may lead to greater coordination and integration of teacher education programs and more careful delineation and acceptance of responsibility for such programs. Other relevant ideas are presented by Schaefer (1967), Clark and Guba (1967) and Wilson (1972). A broader perspective of this topic is provided by the report of the Committee on National Program Priorities in Teacher Education (Rosner, 1972). The works produced by this and related committees offer a number of proposals regarding training complexes and organization, e.g., statewide consortium of centers, the school training center, the university center, the technology-based individual study center. (The training complex program was one of five foundational thrusts for the structure and operation of the Bureau of Educational Personnel Development, USOE--see Training Complexes: Ad Hoc National Advisory Committee on Training Complexes, Final Report. Clark University: Training Complex Administration Center, July, 1970.)

As the above discussion indicate, in order to initially select appropriate procedures, it would be helpful to "pre-test" the impact of the procedure. To do so, however, would require extremely costly research. Therefore, the initial selection of procedures currently must be made on the basis of the curriculum planners' expertise. After the procedure is implemented, its impact can be assessed and, if necessary, new procedures can be selected which have been found empirically or are judged to be more effective. (Such an assessment, which is part of the task of curriculum evaluation, involves a process which is similar to, and more delineated than, that used in evaluating the entire program. Therefore, the general discussion of program evaluation presented in chapter 7 should provide some understanding of this process.)

Curriculum Organization

After appropriate instructional content and procedures have been identified and selected, there is a need for patterning and sequencing, e.g., determining whether there is a need for certain instructional objectives and procedures to be placed in a particular juxtaposition to one another. In effect, one organizes the content and then, if necessary, readjusts the procedures which tentatively have been selected for use in teaching that content. It also should be evident that such organizational problems permeate a program's curriculum. That is, each unit or module has to be organized internally and has to be coordinated and integrated with other program curriculum units. (At this point in the discussion, a unit or module can be described as consisting of a coordinated and integrated set of instructional objectives and procedures which relate to a specific sub-area of instructional focus such as the sub-areas presented in Table 3.)

In discussing such curriculum organization, McNeil (1965) suggests that "good curriculum organization meets three specifications: (a) There is planning for review and reiteration of that which has been learned. . . (this is called) the criterion of continuity. (b). . .the curriculum must extend that learning in depth. . . (called) the criterion of sequence. . . . (c) The skills, values, and concepts taught in one area of study should be related to the other areas of study. . . the criterion of integration. . . ." (pp. 68-69). McNeil continues: "The heart of the organizational problem is being clear about the instructional objective and identification of the steps necessary to its attainment. Subsidiary questions involve how best to order these steps for effective learning. . . . Unfortunately curriculum inquiry has not advanced to the place where we know what constitutes necessary steps in the attainment of objectives. Many so-called prerequisites are just so much busy work" (pp. 69-70).

Planning for equivalent and analagous practice (e.g., review and reiteration) is a rather self-evident activity. Sequencing, however, requires some organizing principles, and a number of suggestions have been offered, e.g., chronological presentation, emphasis on breadth or on depth of application, easy to difficult, part to whole, simple to complex, concrete to abstract, theory then practice, familiar to unfamiliar, and so forth. Unfortunately, it is uncertain when a specific principle should be applied. That is, while a part to whole sequence may be appropriate for accomplishing one objective, a whole to part sequence might be more appropriate for another objective, and a combination of both may be more appropriate for a third.

If the situation is viewed as bad with regard to sequencing principles, it can only be viewed as horrendous with regard to organizing principles for facilitating the integration of the various components of instructional content.[15] It is clear that the knowledge base for evolving a coordinated and integrated curriculum is very weak. Thus the task remains more of an art than a science or even a craft.

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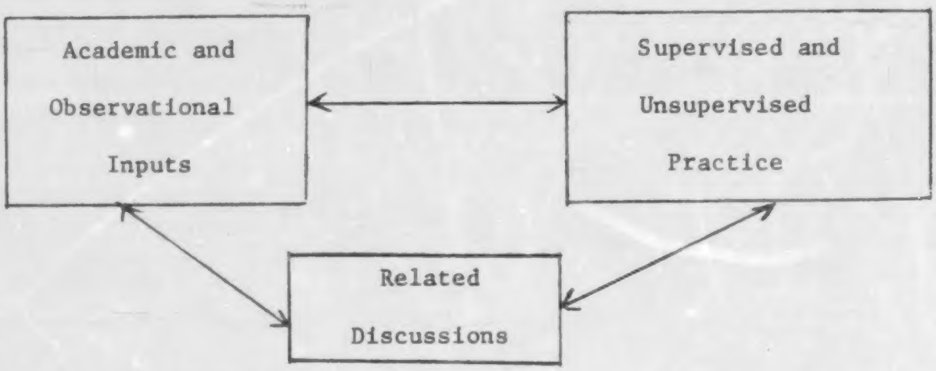
[15] One relevant construct frequently emphasized in the literature on change is that of synergy. This construct emphasizes the need for redundancy and diversity (e.g., repeated inputs from different sources), and, hopefully, synchronicity. As Havelock and Havelock (1973) state: "The simplest example of synergy occurs when two separate individuals give the same piece of advice. Two inputs from two different sources are far more persuasive than the same input from only one source. In a sense, synergy produces a validation of experience."

In practice, it appears as if few programs have even attempted significant coordination and integration within the pre-service or in-service phases and/or between these two phases. Most commonly, the different experiences are initiated haphazardly, with little awareness of what competence a participant already has acquired and with little, if any, coordination with other concurrent or future activities or with other program experiences.

The types of planned relationship between academic, observational, and participatory experiences which should be occuring is represented in the diagram below. As may be seen, there should be constant interaction between the various types of experiences. For example, when a demonstrable concept or technique is introduced academically, the program participant should have the opportunity to observe a demonstration and to engage in unsupervised practice, as well as in supervised practice where he can receive guidance, feedback, and additional demonstrations; in addition, he should have the opportunity to raise questions for discussion based on



his academic and participatory experiences. In turn, the feedback which these discussions provide should help those responsible for the program to determine what should be presented, practiced, and discussed subsequently.

In organizing these experiences, the notion of organizing topics and centers mentioned earlier is a very helpful concept. A corollary idea which has been receiving increasing attention recently is the concept of instructional modules.[16] A good example is found in the work of Arends, Masla, and Weber (1973). These authors define such a module as "a set of learning activities intended to facilitate the student's achievement and demonstration of an objective or set of objectives" (p. 3). The elements of such a module are described as "an objective or objectives, prerequisites, pre-assessment procedures, learning alternatives, post-assessment procedures, and remediation procedures" (p. 22). In keeping with the discussion presented earlier in this chapter, it should be noted that some programs build each instructional module around a group of related observables; others build a series of modules, each of which encompasses only one or two observables. Paraphrasing Arends, Masla, and Weber (1973), whichever format is used, the point is clear: a single observable outcome can rarely stand alone.

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[16] As Jones (1972) points out, such units also have been called a molecule, a UNIPAC, a WILKIT (Weber Instructional Learning Kit, Weber State College), and so forth. Joyce, Morine, Weil and Wald (1971) list and describe many modules which can be ordered. The resource guide regarding instructional planning which is a companion work to the present monograph also provides additional discussion and references to modules. Also see footnote (on p. 73) in this chapter.

"Human behavior is far too complex a process to expect isolated outcomes to be meaningful" (p. 22). It also should be noted that instructional modules may produce outcomes which have not been specified in advance, i.e., which are unanticipated. Such outcomes may be undesired or they may be previously unidentified components of a somewhat abstract intended instructional objective. Other discussions of modules may be found in Altman, Chandler, Connoly, and Meyen (1971), Houston, Hollis, Jones, Edwards, Pace, and White (1971), and in Joyce, Morine, Weil, and Wald (1971).

Again, it should be emphasized, however, that ideas such as topics, centers, and modules are only focal points for facilitating organization and learning with regard to specified instructional objectives.

While coordination and integration of key experiences are necessary facets of a program, it is important to recognize that such coordination and integration are not sufficient. The experiences must be qualitatively good and quantitatively appropriate. Of special importance in this connection may be whether or not a program uses a comprehensive "apprenticeship-like" process with reference to those experiences which involve supervised practice. Most supervised practice rarely resembles a comprehensive apprenticeship process since one of the most important aspects of the apprenticeship model generally is missing. This aspect is the opportunity (a) to observe the "master" perform his craft, (b) to have supervised practice with regard to what was learned, and then (c) to observe some more, and so forth in cyclical fashion until at least the minimal level of competence is assured. Indeed, it is one of the great ironies of pre-service programs that participants so rarely have the opportunity to watch a "master" perform (i.e., plan, implement, and evaluate) for an extended period of time. For example, in practice teaching the student often is required to assume responsibility for the entire operation of the class by the second week of the assignment and from that point on only has verbal exchanges with the supervising teacher. As a consequence, many teachers have served their apprenticeship without having had the valuable experience of seeing their supervising teacher perform over a period of several weeks--that is, they were deprived of the chance to see a good model of teaching. And, of course, once a teacher accepts a full-time position, there are few opportunities for observing a colleague perform for any length of time. Thus, many teachers have not truly served an apprenticeship; it is interesting to speculate as to the impact this has had on their performance.[17]

In view of the complexity of the various facets of curricular planning which have been discussed in this chapter, it seems evident that such planning requires a good deal of resources, particularly individuals with expertise in curriculum development. (Unfortunately, it also seems evident to this writer that it has only been recently that any significant amount of resources have been directed toward curricular planning for personnel preparation programs; and in no way are these resources seen as being sufficient.) Of course, as has been suggested above, even the most expertly planned curriculum requires effective implementation.

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[17] It is recognized that a major problem hampering the use of a comprehensive apprenticeship process is the lack of agreement as to what constitutes a "good teacher". This problem, however, should not be allowed to overshadow the potency of modeling as an instructional process (see McKnight, 1971; Gage, 1972).

And, prior to its implementation, there is a need for appropriate evaluational, administrative, and instructional planning. These are the topics discussed in the next chapter.

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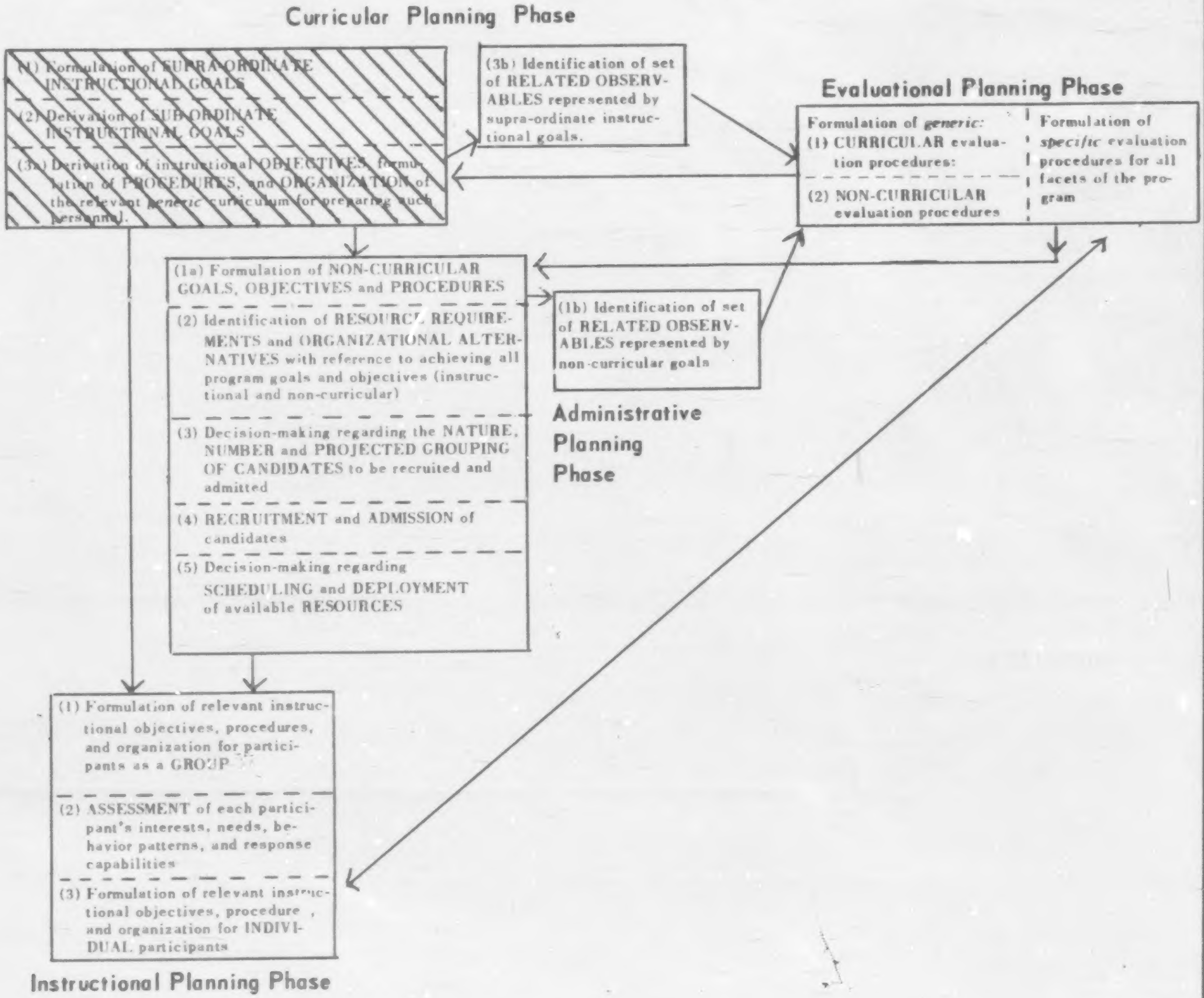
Chapter 5

Evaluational, Administrative, and Instructional Planning

With the curricular planning tasks of deriving instructional objectives, formulating instructional procedures, and organizing relevant generic curriculum accomplished, curricular planning continues with the task of trying to identify the set of related observables represented by


Curricular Planning Phase
(1) Formulation of SUPRA-ORDINATE INSTRUCTIONAL GOALS
(2) Derivation of SUB-ORDINATE INSTRUCTIONAL GOALS
(3a) Derivation of instructional OBJECTIVES, formulation of PROCEDURES, and ORGANIZATION of the relevant generic curriculum for preparing such personnel.
(3b) Identification of set of RELATED OBSERVABLES represented by supra-ordinate instructional goals.
Evaluational Planning Phase
Formulation of generic:
(1) CURRICULAR evaluation procedures:
(2) NON-CURRICULAR evaluation procedures
Formulation of specific evaluation procedures for all facets of the program
(1a) Formulation of NON-CURRICULAR GOALS, OBJECTIVES and PROCEDURES
(2) Identification of RESOURCE REQUIREMENTS and ORGANIZATIONAL ALTERNATIVES with reference to achieving all program goals and objectives (instructional and non-curricular)
(3) Decision-making regarding the NATURE, NUMBER and PROJECTED GROUPING OF CANDIDATES to be recruited and admitted
(4) RECRUITMENT and ADMISSION of candidates
(5) Decision-making regarding SCHEDULING and DEPLOYMENT of available RESOURCES
(1b) Identification of set of RELATED OBSERVABLES represented by non-curricular goals
Administrative Planning Phase
(1) Formulation of relevant instructional objectives, procedures, and organization for participants as a GROUP
(2) ASSESSMENT of each participant's interests, needs, behavior patterns, and response capabilities
(3) Formulation of relevant instructional objectives, procedure, and organization for INDIVIDUAL participants
Instructional Planning Phase

curricular goals, sub-goals, and instructional objectives (see section of Figure 2 which is reproduced on preceding page). Such identification of related observables provides an important basis for the evaluational planning phase which follows this task. Concomitant with curricular planning, the administrative planning phase is initiated. The first task of administrative planning is the formulation of non-curricular program goals, objectives, and procedures. Once this task is accomplished, administrative planning can be pursued in two directions simultaneously. As indicated in the figure, it is necessary to begin to identify the set of related observables represented by the non-curricular goals and objectives. Such identification provides a basis for additional evaluational planning. At the same time, the remaining sequential tasks of administrative planning can be carried out.

With the accomplishment of the administrative planning tasks, instructional planning is initiated. It will be noted that the formulation of relevant instructional objectives, procedures, and organization for individual program participants (which is the last task of the instructional planning phase) provides an important basis for formulation of specific evaluation procedures (which is the last task of the evaluational planning phase). It also will be noted that the products of evaluational planning are combined with the products of each of the other planning phases (curricular, administrative, and instructional) to provide a total plan for the implementation and evaluation of the program. This sequence of planning activity should be kept in mind as we explore, in turn, the evaluational, administrative, and instructional planning phases.

Evaluational Planning

The process of program evaluation is discussed at some length in Chapter 7.[1] The discussion here is limited to clarifying the two major tasks involved in the evaluational planning phase. These are:

Formulation of *generic*: (1) CURRICULAR evaluation procedures:	Formulation of *specific* evaluation procedures for all facets of the program
(2) NON-CURRICULAR evaluation procedures	

The first task encompasses the formulation of generic evaluational procedures for use in determining the validity of the program's curriculum and for determining the overall impact of the program. Involved in this task is (1) the identification and adoption or adaptation of currently available procedures and (2) development of new procedures. The procedures which result from this activity should be appropriate ways of sampling whether program goals (curricular and non-curricular) are attained effectively and efficiently with a minimum of negative side effects. And, the appropriateness of the sampling is highly dependent on how successful curriculum and administrative planning has been in identifying a widely accepted, valid set of related observables (which the abstractly stated program goals are intended to represent). In view of the increasing demands for accountability, it is important to be very clear about this point (which we initially raised in Chapter 4). In theory, evaluational planning should occur only after (1) program goals have been evolved into sets of instructional and non-curricular objectives and procedures and (2) the related observables encompassed by such goals are identified. In practice, however, frequently only a small number of the related observables have been identified (or accepted). The abstract nature of such goals results in differing interpretations as to what should be measured. Therefore, it should be realized that when a specific evaluation procedure (be it a standardized test or a mandated criterion referenced test) is used to determine whether such goals have been accomplished, the procedure applies its own definition of the goals. Since the definition around which the evaluation procedure has been developed may be very different from the program implementers' interpretation of the goals, the evaluation findings may be interpreted as indicating that the goals have not been met satisfactorily. More correctly, the findings only show that the evaluation procedure's definition of the goals has not been met. It well may be that the program implementers' interpretation of the goals has been met. However, if there is not an appropriate evaluation procedure available which reflects such an interpretation, the implementers will not be able to demonstrate their accomplishment.

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[1] As part of our project activity, we also have compiled a guide to resources for use in evaluation planning efforts. This guide is presented as a companion work to this monograph.

The irony in such instances is that a measuring procedure may be adopted because it is available, and program implementers, knowing that they will be held accountable to the measuring procedure's interpretation, may begin to "teach to the test," even though they feel the evaluation criteria are inappropriate. In this way accountability pressures may come to supplant curriculum and administrative planning in the determination of various facets of a program (particularly outcomes).

It should be clear from the above discussion that pressure for accountability can lead to inappropriate evaluational planning which, in turn, can produce undesirable consequences. To avoid such evaluation abuses, evaluational planning must be closely tied to curriculum and administrative planning so that the generic evaluation procedures developed will reflect variations in goal interpretation. That is, for a goal where there is a high degree of agreement, one procedure (or one set of procedures) can be adopted, adapted, or developed and then validated; for goals where there is little agreement, several different alternatives are needed to allow administrative and instructional planners to select evaluation procedures which are consistent with the planners' interpretations. And, when an appropriate evaluation procedure is not available, probably no procedure should be used until an appropriate one is developed.

Once the generic evaluational procedures are formulated, the various products can become part of (a) appropriate generic curriculum packages and (b) any program's administrative plans. Then, the next evaluational planning task can be undertaken, i.e., the formulation of specific evaluational procedures. This task is designed to respond to the idiosyncratic curricular and non-curricular facets of the program which arise out of administrative and instructional planning. That is, specific evaluational procedures are formulated, based on input from such planning (e.g., input regarding: administrative objectives related to administering the program and to performing relevant research, in-service training, and public service functions; instructional objectives formulated for particular groups and individuals).

Administrative Planning[2]

At this point, it should be emphasized that this entire discussion of personnel preparation programs is based on the assumption that such programs exist within a larger organizational structure, e.g., an institution of higher education, a school district, etc. Thus, the larger organization is seen as providing a general budgetary allocation to support administrative, instructional, and some evaluational planning, as well as for the implementation and evaluational phases. (In Chapter 8, we will discuss our view of the appropriate base of support for developing the program's rationale and for curricular planning and for the major facets of evaluational planning.)

In this section, then, administrative planning refers only to the following concern: Given a set amount of resources and a given type (or types) of personnel to be prepared, how should these resources be deployed so that the accomplishment of appropriate curricular and non-curricular outcomes is maximized? In keeping with the framework presented in Figure 2, this concern can be stated as a series of three sub-questions. How should the available resources be deployed to insure that: (1) the program's generic planning is translated into an appropriate plan of person-oriented instruction? (2) this person-oriented plan is implemented appropriately? (3) appropriate evaluation is made of the efforts to plan, implement, and evaluate the program?

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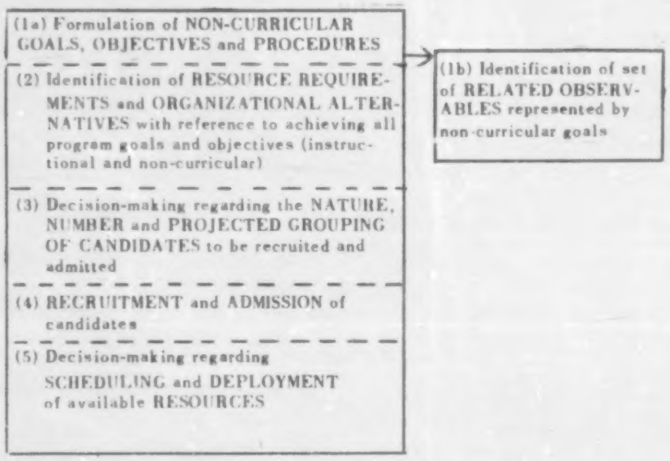
[2] The reader who is unfamiliar with the literature on educational administration will find the following resources to be a good introduction: H.J. Hartley, Educational planning--programming--budgeting (1968); A.W. Halpin, Theory and research in administration (1966); D.I. Cleland and W.R. King, Systems, organizations, analysis, management: a book of readings (1969). And with specific reference to personnel preparation programs in education, there is A systems approach to program design, book 2, J.W. Cooper, M.V. DeVault, et al., Competency based teacher education (1973).

More specifically, this level of administrative planning is viewed as involving the following tasks:


(1a) Formulation of NON-CURRICULAR GOALS, OBJECTIVES and PROCEDURES
(1b) Identification of set of RELATED OBSERVABLES represented by non-curricular goals
(2) Identification of RESOURCE REQUIREMENTS and ORGANIZATIONAL ALTERNATIVES with reference to achieving all program goals and objectives (instructional and non-curricular)
(3) Decision-making regarding the NATURE, NUMBER and PROJECTED GROUPING OF CANDIDATES to be recruited and admitted
(4) RECRUITMENT and ADMISSION of candidates
(5) Decision-making regarding SCHEDULING and DEPLOYMENT of available RESOURCES

In addition, some key sub-tasks are presented in Table 7.

To accomplish these tasks in a systematic manner requires the use of a variety of administrative practices, especially analytic planning techniques. There are many such techniques advocated in the administartion literature, e.g., Operation Research (OR), Management Information Systems (MIS), Program Evaluation and Review Techniques (PERT), Program Planning and Budgeting System (PPBS). For the reader who wishes to review some of the pros and cons of such systematic approaches, there is the discussion by Hartley (1968) (who, it should be noted, is an advocate of PPBS).

Whichever approach one chooses to adopt, it is important to avoid viewing such a system's emphasis in a narrow context. What the adoption of such systems is intended to accomplish is an effective and efficient planning procedure for relating program objectives to human and material

TABLE 7

Some Key Tasks and Sub-Tasks of Administrative Planning

TASKS				
1a. Formulation of non-curricular program goals, objectives, and procedures	2. Identification of resource requirements and availability and organizational alternatives with reference to achieving all program goals and objectives	3. Decision-making regarding the nature, scope, and dispersal of candidates to be recruited and admitted	4. Recruitment, selection, and admission of candidates	5. Decision-making regarding deployment of available resources and regarding scheduling
SUB-TASKS				
1. Deployment of resources for initial administrative planning 2. Formulation of supra-ordinate non-curricular goals 3. Derivation of sub-ordinate non-curricular goals and then derivation of objectives 4. Formulation of the procedures for accomplishing non-curricular objectives	1. Determination of the direct and indirect resource needs to achieve stated goals and objectives 2. Clarification of the nature and scope of allocated funds and assigned personnel, facilities, and materials 3. Identification of potential sources of additional "free" personnel, facilities, and materials 4. Identification of organizational alternatives	1. Analysis of implications of data on resource requirements and availability with reference to recruitment, selection and admission 2. Analysis of implications of program's assigned/adopted purpose with reference to recruitment, selection, and admission 3. Specification of plans for recruitment, selection and admission	1. Implementation of recruitment, selection, and admission 2. Evaluation of recruitment, selection, and admission activities for purposes of subsequent revision	1. Analysis of implications of data on who is finally admitted with a view to deploying resources and scheduling 2. Evaluation of adequacy of support with a view to seeking a revision of resource support which has been provided for the program 3. (Re)deployment of provided resources 4. Establishment of a plan for the continuous monitoring of resource-use with reference to progress in accomplishing program goals

resources. As Hartley (1968) states, a system's approach is not *per se* " . . . a restraint device that mandates decisions strictly on a cost basis with the quantitative measures of economic calculus" (p. 50). " . . . if anything can be learned from our past, it is that we should not make educational decisions solely on the basis of minimum cost and maximum financial efficiency. A danger exists that quantitative analysts may encourage this cult (of efficiency) at the expense of educationally desirable, but not measurable, objectives and procedures" (p. 50).[3]

Instructional Planning

The reader probably already has recognized that much of the *generic* planning which has been discussed as occurring during a curricular planning phase does not happen currently. Therefore, the general tasks involved in curricular planning are left for the instructional planning phase. This, indeed, is unfortunate since the specific tasks involved in the instructional planning phase are demanding enough.

In contrast to curricular planning, instructional planning should deal with the problem of deciding the specific nature and scope of a program's instructional content and process. Three major tasks of planning are explored here:

(1) Formulation of relevant instructional objectives, procedures, and organization for participants as a GROUP

(2) ASSESSMENT of each participant's interests, needs, behavior patterns, and response capabilities

(3) Formulation of relevant instructional objectives, procedures, and organization for INDIVIDUAL participants

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[3] In my opinion, one of the critical problems in the field of education is related to the (administrative) task of recruiting (and maintaining)

Permeating these three tasks is the process of: (1) identifying the types and location of available assessment procedures and curriculum packages (e.g., an organized set of generic instructional objectives and procedures and related evaluation procedures); (2) adopting or adapting appropriate and feasible assessment and curricular resources when they are available; (3) developing new assessment and curricular resources when necessary and within the limits prescribed by time, cost, competence, and so forth (see Figure 6).

If the types of curricular and administrative planning described in Chapter 4 and in the preceding section have been accomplished, the first task of instructional planning encompasses the following steps: (a) reviewing the assessment data on the participants who have been admitted to the program (with an awareness of the limitations of such data), (b) identifying and selecting curriculum and evaluation packages which are judged to be appropriate for such participants, and, if necessary, (c) modifying (adding to, altering, deleting from) such packages. Such planning can be accomplished prior to meeting with the program participants and provides much of the framework for implementing instructional and evaluational activity.

In addition, however, if a program is to be effectively personalized, more information is needed regarding the individual program participants than can be found in the initial selection data. The necessary information can be gathered through additional testing, questionnaires,

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high-calibre persons. Because of the critical nature of this problem, Appendix IV is devoted to a brief discussion of matters related to luring and keeping high-quality persons.

		PROCESSES		
		Identifying available assessment procedures and curriculum packages	Adopting or adapting appropriate assessment and curricular resources	Developing new assessment and curricular resources
TASKS	Formulation of relevant instructional objectives, procedures, and organization for participants as a group.			
	Assessment of each participant's interests, needs, behavior patterns, and response capabilities.			
	Formulation of relevant instructional objectives, procedures, and organization for individual participants.			

Figure 6. Key Tasks and Processes Related to Instructional Planning

interviewing, and observation. We have found it particularly helpful to use the first few contact sessions as orientation and assessment sessions (rather than as lectures or general discussions). The major purposes of these sessions is to gather information and to involve the participant in planning variations in environmental circumstances in order to facilitate an "appropriate match" between (a) a participant's interests, needs, behavior patterns, and response capabilities and (b) the instructional objectives, procedures, and organization. The success of such instructional planning will be reflected by the reduced amount of trial and error and redundancy required to produce appropriate learning outcomes and the addition of personalized procedures and outcomes. For example, such "pre-assessment" can result in (a) the addition of instructional objectives designed to develop pre-requisite skills which a participants may not have acquired, (b) the deletion of objectives in areas where the participant already has attained the appropriate degree of mastery, and (c) the addition of "enrichment" opportunities for specific individuals, e.g., some participants may want to learn to speak Spanish because they are planning on working in areas which serve Spanish-speaking populations.

The assessment procedures which provide the information needed for such instructional planning can be categorized (as can instructional practices) in terms of whether they are designed for large groups, small groups, or an individual. Thus, we label practices designed for use with large groups "broad-band" practices and those designed for small groups or individuals are categorized as "narrow-band" practices. In this context, it can be emphasized that in planning which broad-band teaching practices to use, the instructional planner should know about the general interests, needs, behavior patterns, and response capabilities of the participants who have been accepted into the program. Fortunately, (s)he may already know something about such factors because of knowledge about past program participants and available normative data about human behavior. Assessment in such instances, then, essentially is a matter of determining whether or not most of the program participants correspond to such norms. If a particular group of participants varies significantly from such norms, the assessment data provide useful information for planning broad-band instructional practices which will allow for an "appropriate match" for the large majority of participants. For economical and other reasons, such assessment data can and should be gathered through the use of broad-band assessment practices. In planning which narrow-band instructional practices to use, the instructional planner should know about the specific interests, needs, behavior patterns, and response capabilities of a particular participant. (Again, our knowledge of behavioral norms will be helpful.) Assessment in such instances is oriented to the individual and should be designed to provide specific guidance for varying environmental circumstances to facilitate learning for that individual. While broad-band assessment practices (e.g., standardized aptitude tests) often can be used for such purposes, narrow-band assessment practices (e.g., personal interviews) usually are necessary as well.[4]

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[4] Merrill (1971) discusses three types of pre-tests: (1) prerequisite pretests, designed to determine whether the student has acquired needed antecedents, (2) diagnostic pretests, designed to determine if the

Based on such broad- and narrow-band assessment data, then, instructional planning can be directed at making any necessary and appropriate modifications with reference to available curricular and evaluative resources. That is, (a) available curricular and evaluation resources can be adopted or adapted and, if necessary, (b) new curricular and evaluation resources can be developed. Once these instructional planning activities are accomplished, final pre-instruction decisions can be made regarding scheduling, grouping students, and deploying paid and volunteer personnel.

The broad areas of competence needed to carry out instructional planning activity are the same as those required for doing curricular and evaluative planning, e.g., competence with regard to deriving instructional objectives, procedures, and organization which are consistent with a program's rationale and goals. However, it should be emphasized that pre-service preparation programs for instructional personnel cannot require participants to develop the full range of facts, concepts, behaviors, skills, and attitudes needed to do curricular and evaluational planning nor can such programs require development of a high level of competence in these areas.[5] Consequently, the nature and

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student already has acquired aspects of the intended instructional outcomes, and (3) terminal behavior pretests, designed to see if the student already is performing to criteria with reference to intended instructional outcomes.

[5] For example, in view of how much one has to learn in order to do such instructional planning, it seems inappropriate to spend as much time as some pre-service programs do in teaching such skills as writing instructional (usually behavioral) objectives. Writing such objectives is viewed as only one small facet of what must be learned and therefore, such a skill should not be overemphasized to the detriment of other important skills.

scope of the curriculum and evaluation modifications which are made during the instructional planning phase will vary with the current level of competency of the planner. Realistically, newly certified professionals should not be expected to have more than a minimal level of competence with regard to instructional planning (although this area may be developed to a higher level than some others). In view of its importance, however, additional training in instructional planning should be an early and major focal point of in-service training programs.[6]

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[6] As an aid to the reader who wants to increase his/her understanding of curricular, instructional, and evaluational planning, we have prepared two resource guides as companion works to this monograph. (See abstracts in Preface.)

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Chapter 6

Implementing the Planned Program

In discussing the implementation phase, the focus in this chapter is first on some general considerations related to learning, teaching, and "classroom" instruction and then on the key tasks involved in carrying out both *instructional* and *non-curricular* activities.

Learning, Teaching, and "Classroom" Instruction

As a basic assumption, we view all classroom instruction (in regular and remedial classrooms and in personnel preparation programs) as involving the application of the same basic principles. In discussing the implementation of instruction, it will be helpful to begin by discussing the processes of learning and teaching. These two processes are basic to our entire discussion of programs to prepare personnel. And, yet, a comprehensive review of the various theories which have been offered regarding the nature of these processes is beyond the scope of this monograph. Thus, what follows is a brief conceptualization which is intended to convey the author's view of the processes of learning and teaching and the relationship between these processes and successful and unsuccessful classroom instruction.[1]

The process of learning. The following formulation has been evolved from J. McV. Hunt's (1961) extensive review and expansion of Piaget's general conceptions.

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[1] This conceptualization is adapted from an article by Adelman entitled "Remedial classroom instruction revisited," *Journal of Special Education*, 1972, 5, 311-322.

In very basic terms, learning can be viewed as resulting from the adaptive interaction between an individual and his environment. To explain the nature of the interaction, Piaget has postulated two complementary processes, assimilation and accommodation, which correspond to inner organization and outer adaptation, respectively.

With reference to psychological functioning, assimilation is the process by which an individual centrally processes environmental circumstances, incorporating them without having to modify his centrally organized structures (schemata), e.g., when something new is perceived as familiar or when new situations are responded to in the same way one has responded to other situations. (As Hunt points out, assimilation encompasses such phenomena as stimulus and response generalization. However, as he also states, in Piaget's conception the central processing structures [schemata] are Gestalt-like structures rather than associative or connective relations between observed stimuli and responses.) During assimilation, then, the central processing structures, which are manifested as a response repertoire of repeatable and generalizable pieces of behavior, alter the perception of environmental circumstances to fit the existing central organization.

Accommodation is the process by which one tends to modify existing schemata in order to meet the demands that variations in environmental circumstances place on the central processing structures, i.e., when the variations are such that they cannot simply be assimilated. Such accommodative modifications result in the acquisition of new responses, the changing of old responses, or both.

Piaget's view is that when the assimilative and accommodative processes oppose each other, tension is produced, and it is the resolution of this tension which is seen as leading to accommodative modification and growth in one's adaptive assimilated schemata. (Such accommodative modification and growth in schemata usually are associated with repeated processing of demanding variations in environmental circumstances, e.g., as occurs in practice and play situations.) In this way, then, one's central processing capabilities and one's capacity for accommodation are increased. That is to say, (1) learning has occurred, and (2) the individual is ready to learn something which builds on this previous learning, e.g., the next step in a sequence or something more complex.

To further clarify this conceptualization, Hunt has specifically formulated and developed the principle that such "accommodative modification and growth (is) a function of the match between environmental circumstances and existing schemata" (p. 267). From this principle, it may be implied that environmental circumstances produce learning (accommodative modification and growth in schemata) when and only when there is a discrepancy between the circumstances an individual encounters and the schemata he has already assimilated into his repertoire. More specifically, it may be inferred that appropriate learning is dependent upon (1) the discrepancy being within the limits of an individual's capacity for accommodation, and (2) the appropriate operation of the accommodative and assimilative processes. Thus, as diagrammed in Figure 7[a], an "appropriate match for successful learning is one where there is an accommodatable discrepancy between one's adaptive assimilated schemata and the environmental circumstances one encounters. ("Environmental circumstances" are viewed as encompassing the combined impact of

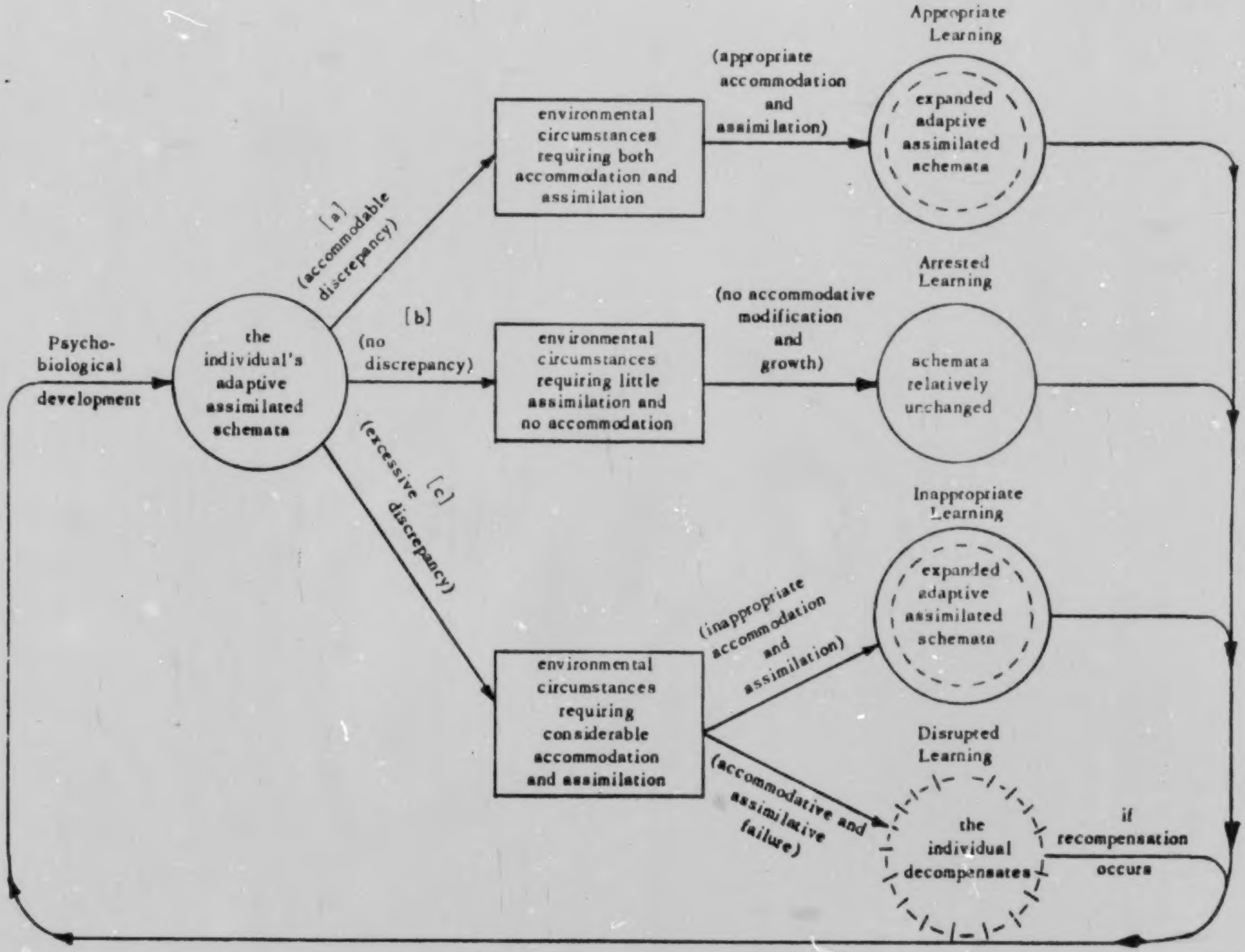
Psycho-
biological
development
the individual's adaptive assimilated schemata
[a] (accommodable discrepancy)
[b] (no discrepancy)
[c] (excessive discrepancy)
environmental circumstances requiring both accommodation and assimilation
environmental circumstances requiring little assimilation and no accommodation
environmental circumstances requiring considerable accommodation and assimilation
(appropriate accommodation and assimilation)
(no accommodative modification and growth)
(inappropriate accommodation and assimilation)
(accommodative and assimilative failure)
Appropriate Learning
expanded adaptive assimilated schemata
Arrested Learning
schemata relatively unchanged
Inappropriate Learning
expanded adaptive assimilated schemata
Disrupted Learning
the individual decompensates
if recompensation occurs

Figure 7. The Process of Learning

external and internal stimuli, e.g., physical, socio-cultural, cognitive, and affective stimuli.) For purposes of this discussion, the appropriate match for peak learning is viewed as being a discrepancy which demands the fullest use of one's accommodative capacity.

In contrast, the absence of a discrepancy between the environmental circumstances one encounters and one's adaptive assimilated schemata is viewed as resulting in "arrested" learning. Thus, when there is no discrepancy (a "perfect" match) between an individual's central processing structure and environmental circumstances, there is no accommodative modification and growth (see Figure 7[b]). This is the situation when there is nothing to accommodate, such as is the case when there is inadequate stimulation. In the case of inadequate stimulation, the already assimilated schemata may be strengthened, and/or there will be a lag in the learning process. If the stimulus deprivation is not prolonged, the lag in learning is temporary. However, if the period of enadequate stimulation is lengthy, the resulting lag will be more severe.

Finally, if there is a discrepancy which is beyond one's accommodative capacity, distress and avoidance responses are evoked. This is the situation when there is overstimulation, extreme discontinuities, and so forth. If the individual cannot avoid the circumstances, i.e., must process the demanding variations, the result is (a) inappropriate learning (inappropriate accommodation, assimilation, or both) or (b) "disrupted" learning (accommodative and assimilative failure). Thus, if there is a lengthy period of confrontation with circumstances which must be accommodated, the individual will either acquire a faulty assimilated schemata for adapting to such circumstances or will psychologically decompensate

(See Figure 7[c]).[2]

The process of teaching. In keeping with the preceding conceptualization of the process of learning, teaching is viewed as the process by which accommodation and assimilation are facilitated as a result of a "teacher's" efforts to control the match between the environmental circumstances the learner encounters and the schemata he has already assimilated. (As Hunt [1961] states, "the principle that environmental circumstances force accommodative modifications in schemata only when there is an appropriate match between the circumstances that a child encounters and the schemata that he has already assimilated into his repertoire, is only another statement of the educators' adage that 'teaching must start where the learner is'" [pp. 267-268].) Efforts to control the match, of course, are complicated by the fact that experience and maturation are continually changing the schemata of the learner; further complications arise because of the varying degrees of access and control which teachers have over relevant environmental circumstances. Because of such factors, the matching process continues to remain a matter of trial and error.[3] Fortunately, some of the trial and error is removed by our knowledge of the general trends and stages of human development and behavior. And even more of the trial and error is removed when we have specific knowledge of the individual learner's assimilated schemata.

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[2] Selye (1956) has formulated a model, the general-adaptation-syndrome, describing such decompensation. As Coleman (1969) points out, while Selye's formulation is concerned mainly with physiological breakdown, psychological decompensation seems to follow a similar pattern. The model describes the individual's reaction to excessive stress as following three stages: an alarm reaction state (e.g., the individual is continuously tense and anxious), a stage of resistance (e.g., excessive use of ego-defense mechanisms), and a stage of exhaustion (e.g., psychotic break).

[3] A similar point is made by Hough and Duncan (1970) who state: "Sometime in the future, educators may be able to say that, given a particular student, a particular teacher, and a particular objective, one specific instructional strategy would, if employed, be the most

Ideally, then, in his efforts to facilitate accommodation and assimilation, the instructor uses his knowledge of the learner's schemata in order to vary environmental circumstances in a way which

1) attracts and focuses the learner on relevant stimuli,

2) results in the initiation and maintenance of the learner's appropriate participation,

3) produces appropriate communication between the instructor and learner regarding results,

4) strengthens preceding learning and behavior patterns for both the learner and instructor.

And in this context, any procedure employed in varying the environmental circumstances may be considered a teaching practice. The best procedures, however, are viewed as those which are designed to capitalize on what is known about learning and instruction with specific reference to such matters as:

a) motivation, e.g., the role of realistic goals, incentives, negative consequences;[4]

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effective means of facilitating student learning. At the present, it is not possible to make such a statement. There are some 'generalizable' principles of instruction that usually apply, but the number of such principles is relatively small." (p. 112).

[4] The following statement by Lange (1967) about motivation and its relationship to the impact of instruction is interesting. "In its simplest form, the impact of instruction is a function of motivation, curriculum

b) attention, e.g., the role of "set", vividness, cues;

c) performance and practice, e.g., the role of active participation, massed vs. distributed practice, "real life" circumstances, overlearning;

d) reinforcement, e.g., the role of feedback, mastery, schedules of reinforcement, contingency management;

e) interpersonal relationships, e.g., task-focused communication, group dynamics, leadership style;

f) growth and development, e.g., sensory, perceptual, motoric, linguistic, cognitive, social, and emotional;

g) a particular curricular area, e.g., history; philosophy, moral development.

The management of teaching and learning in the "classroom." With reference to "classroom instruction, the management of teaching and learning is not a matter of facilitating peak learning. In or out of the classroom, the problem of facilitating the most advantageous match (between environmental circumstances and a learner's assimilated schemata) for peak learning probably is insurmountable. To even approximate such an ideal would certainly require a considerable amount of specific and active interaction between an instructor and a particular learner. And, of course, the enrollment level in most personnel preparation programs

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analysis, and learning control (both external and internal). . . . Impact equals motivation times the sum of curriculum analysis and learning control. If motivation is zero, if no value is placed upon the learnings, there is no impact--at least not in the desired direction. . . . Probably the greatest problems in all instruction result from the assumption that the learner is motivated for the learning and the assumption that learning has been achieved" (pp. 150-151).

precludes much in the way of such one-to-one interaction.

In such programs, the management of teaching and learning involves facilitating an "appropriate match" so that the learners will learn at least satisfactorily. While it is easier to achieve this than it is to facilitate peak learning, it is still a difficult job. Indeed, it seems clear that, at the present time, the best that instructors can do is to facilitate an appropriate match for a large majority of learners for whom they are responsible. The remaining students, unfortunately, do not learn as much as we intend that they should.

In order to better conceptualize this problem, any student population can be viewed as varying with regard to the degree of specific and active interaction between the instructor and a particular learner which is needed in order to facilitate at least satisfactory learning and performance.[5] And the procedures used with this population can be viewed as (a) broad-band practices, i.e., procedures useful in instructing large groups of learners, and (b) narrow-band practices, those designed for use with small groups and individuals.[6]

Thus, in keeping with the discussion to this point, (1) large group instruction using broad-band practices is seen as being at least a satisfactory means for establishing an "appropriate match" for the majority of of learners; and (2) such instructional practices are viewed as likely to be unsatisfactory for some learners, i.e., those students whose learning is "arrested, inappropriate, or disrupted." Furthermore, since no one claims that current broad-band practices are optimal or that all instructors are equally competent, it seems reasonable to suggest that some learners do poorly not so much because of their own deficiencies but because of the limitations of such teaching practices and inappropriate variations in their application.[7]

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[5] The above statement is not meant to imply that the physical presence of an instructor is required, i.e., learning may occur from the learner interacting with materials and managed settings or with an instructor-via-media such as video or film.

[6] The conceptualization of learning, teaching, and assessment which has been presented in this monograph (and elsewhere) convinces me that during the pre-service preparation of regular classroom teachers, instruction in the use of broad- and narrow-band practices should, for the most part, be taught separately (see Appendix V).

It also should be noted that it is assumed that all learning which occurs in a "classroom" is not, will not, and should not be the result of an instructor's efforts to provide formal instruction. For example, it seems evident that no instructor is able to teach successfully all the skills which can be detailed and sequenced as being needed by the beginning teacher who will be teaching reading; even if it were possible, there is no satisfactory evidence that this type of approach to the instructional and learning processes is necessary or desirable. In keeping with this assumption, the instructor's function is viewed not only as that of instruction, but of facilitation as well, i.e., a person who leads, guides, stimulates, clarifies, supports. Consequently, (s)he must know when, how, and what to teach *and* also know when and how to structure the situation so that students can learn on their own.[8] Of course, if students are to assume responsibility for their own learning, they should be involved in many facets of program planning, implementation, and evaluation.

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[7] A more complete discussion of this topic with specific reference to children is presented in a companion monograph to this work entitled *Learning problems and classroom instruction* (Adelman, 1973).

[8] In this context, it is interesting to note that much more learning than formal instruction might take place in some classrooms. The whole discussion presented above is suggestive of the importance of focusing first on the question of when and how students learn and then considering what an instructor's role and function should be with reference to *classroom* learning.

A note on personalizing instruction in personnel preparation programs. Ideally, personalized (as differentiated from individualized) instruction successfully accommodates individual differences in development, performance and motivation. Even if one assumes that developmental differences will be of negligible importance and if one ignores the importance of motivational factors, it is obvious that the program participants will differ in terms of immediate performance abilities, particularly with regard to the rate at which they become proficient enough to meet specific performance criteria. Clearly the problem of accommodating such differences in pace is eased in a flexibly scheduled, competence oriented program as contrasted with a program which adheres to a rigid, formal course, unit, and hour format. Hopefully, besides differences in performance rate, other individual differences will be accommodated as well, e.g., special support for any participant who lacks a prerequisite skill.

More generally, if a program is to be effectively personalized, it is probably important that the students and the instructors perceive themselves as participants in an educational enterprise which encourages innovation and continued experimentation. It is such a perception which contributes greatly to increased enthusiasm and additional expenditures of effort. In this sense personalized programs may be viewed as involving, in great part, an institutionalization of the Hawthorne effect. While the Hawthorne effect usually denotes a temporary and deceptive effect, there is no theoretical necessity for the positive attitudes and increased behavioral output which result from being part of an experimental program to be temporary or deceptive in nature. The personalized program lends itself to the inclusion of such phenomena as a stable and positive aspect of the learning situation. What is being advocated is not complete novelty or novelty for its own sake, but a continuing emphasis on innovative practices to help elicit and maintain instructor and student interest and effort.[9]

Key Tasks in Implementing a Program

As has been suggested in the preceding discussion, instructional planning is an important key to facilitating an appropriate match between environmental circumstances and a learner's assimilated schemata. Analogously, administrative planning is an important key to facilitating the accomplishment of the program's administrative, research, in-service training, and public service objectives. After the initiation of planned instructional and non-curricular activities, on-going assessment in the form of formative evaluation is necessary in order to continue to facilitate appropriate transactions and outcomes. That is, such assessment or formative evaluation provides both general and specific information regarding how environmental circumstances (i.e., materials, methods, settings) should be varied to facilitate learning, as well as how non-curricular activities should be modified and managed to produce planned outcomes.

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[9] Schalock and Garrison (1973) suggest that seven conditions must be met before a preparatory program becomes genuinely personalized: (1) person-to-person experience must be planned; (2) a variety of instructional-learning options must be available to meet individual needs; (3) students must participate in the design of their own programs; (4) students must participate in the design and development of the overall program; (5) there must be a mechanism, such as sponsorship, negotiation or performance contracting, for the personalization process; (6) students and staff attitudes must permit personalization; and (7) assessment must be consistent with personalization.

More specifically, as indicated in Figure 2, the major tasks involved in implementing the program are:

(1) INITIATION of planned instructional and non-curricular activity	(2) ONGOING ASSESSMENT of instructional and non-curricular activity	(3) Modification and ongoing MANAGEMENT of instructional and non-curricular activity

Fortunately, elsewhere in this monograph, we have covered most of what needs to be said here about the second task and about the program modification facet of the third task. That is, the second task--on-going assessment or formative evaluation--is covered conceptually by the discussion of the assessment process presented in the preceding chapter and by the discussion of evaluation in the next chapter. (In addition, the resource guide on evaluation which has been prepared as a companion work to this monograph should provide some practical help.) With reference to the third task (which involves the modification and on-going management of instructional and non-curricular activity), the program modification facet of this task basically involves program (re)planning and thus is covered by the discussion in the preceding two chapters and in the resource guide regarding instructional planning. Furthermore, we view the first task, i.e., initiating activity, as being essentially the same as making the transition from one activity to another which is a key sub-task of on-going program management. As a result of the above noted circumstances, we can limit our discussion here to briefly suggesting what is involved in the on-going management of instructional and non-curricular activity.

In keeping with the view that what we are trying to accomplish is an appropriate match between environmental circumstances and people, on-going program management can be viewed as involving two major concerns. One concern is how to structure the environment in a way which is compatible with the fostering of each involved person's desire and ability to learn or perform. A second concern is how to interact effectively with pertinent others, both within and outside the program.[10] (In dealing with such concerns, it is well to recognize that efforts to overcome the various problems which arise include not only the direct resolution of a problem, but also include compensating for or tolerating a particular difficulty.)

As can be seen in Table 2, discussion of on-going management can be oriented around three topics (sub-sub-areas for instructional focus)--materials, methods, and behavior settings. This part of the outline, expanded to include key sub-facets of each of these topics, is presented in Table 8.

Each of these sub-facets deserves extensive discussion. However, such discussion is beyond the scope of this monograph. It must suffice here simply to re-emphasize that such management requires capitalizing on what is known about learning, behavior, and instruction with specific

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[10] Besides the obvious interactions with program participants, it should be noted that persons responsible for on-going program management may interact within the program (1) with persons in positions of authority above them, (2) with persons in peer roles, and (3) with persons in sub-ordinate roles. The major interpersonal interactions outside the program which appear pertinent include members of such groups as professionals in other fields and disciplines, government personnel, community leaders, and so forth.

TABLE 8

Outline of Areas for Instructional Focus with Specific Reference to the Ongoing Management of Program Activities (Derived to the Fourth Level)

VII. Program Implementation

- D. Ongoing Management of Program
  - 1. Materials (medium - message)
    - a. Display
    - b. Distribution
    - c. Special Techniques for Specific Materials
  - 2. Methods (Procedural Models - Activities - Techniques)
    - a. Facilitating Activation of Participants
    - b. Facilitating Focused Behavior
    - c. Facilitating Initiation of Activity
    - d. Facilitating Maintenance of Participation
    - e. Facilitating Appropriate Communication between Participants Regarding Results
    - f. Strengthening Preceding Learning and Performance Patterns
  - 3. Behavior Settings (Organizational Format - Type, Locale, and Scope - Climate)
    - a. Authority Relationships
    - b. Peer Relationships
    - c. Intellectual Climate
    - d. Emotional Climate
    - e. Moral Climate
    - f. Physical Environment

reference to such matters as: (a) motivation, (b) attention, (c) performance and practice, (d) reinforcement, (e) interpersonal relationships, (f) growth and development, and (g) a particular curricular area (see discussion earlier in this chapter).

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Chapter 7

Evaluating Personnel Preparation Programs in Education[1]

(1) DESCRIPTION of program	(2) JUDGEMENT of program

Until recently, the question of how to evaluate, systematically and comprehensively, the nature and worth of preparation programs for the education professions generally was ignored. Currently, it is one of the most discussed and least understood concerns in the field of education. This chapter encompasses an attempt to present a brief conceptual framework for understanding what is meant by the term evaluation and what is involved in evaluating programs which prepare educators.

Evaluation and Research Differentiated

For purposes of the following discussion, program evaluation is defined as that process by which attempts are made to understand total programs in order to describe, predict, explain, and make decisions, e.g., determining the overall impact and value of a training program. (By way of contrast, in the context of program evaluation, assessment is viewed as that process by which specific components of a program are described and usually are judged. A program evaluation, then, can be viewed as a synthesis of component assessments, but when it comes to judging the total package of data, the whole should be viewed as being more than the sum of the various component parts.) Stake and Denny (1969) have expressed the goal of evaluation as follows: "Evaluation is not a search for cause and effect, an inventory of present status, or a prediction of future success. It is something of all of these but only as they contribute to understanding substance, function, and worth" (p. 370).

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[1] This chapter is adapted from material presented elsewhere, e.g., see H.S. Adelman, Teacher education and youngsters with learning problems, Part I: Basic issues and problems confronting teacher education programs. *Journal of Learning Disabilities*, 1972, 5, 467-483.

Most writers in this area have made a distinction between evaluation and research as related to educational programs, and the distinction has been conceptualized in a number of ways. In its most basic form, evaluation may be viewed as any process by which information is gathered and judgements are made about a specific program. Often such information is non-generalizable because of the lack of appropriate standards by which appropriate relative and/or absolute comparisons might be made. In contrast, educational research which focuses on program evaluation may be viewed as a process by which information is systematically gathered using carefully controlled procedures and appropriate comparisons, thereby producing information which may have widespread implications. McIntyre, Meierhenry, Hoffman, Baldwin, and Fredericks (1969) distinguish between evaluation and research as related to education programs by conceptualizing the two as being on a continuum with informal evaluations at one end and highly controlled comprehensive research efforts at the other end.

Perhaps the greatest value of the distinction between program evaluation and research is not so much that it clarifies the conceptual difference between the two but that it clarifies the limitations of many current evaluative efforts. Ideally, all programs should be comprehensively evaluated using a research design which allows for absolute and/or relative comparisons with appropriate standards. Such formal and systematic evaluations would provide both useful feedback for a specific program and generalizable information which would be of value to others, e.g., the data collected could make a substantial contribution to efforts to deal with basic issues confronting the field of education.

Key Factors in Evaluating Personnel Preparation Programs

In conceptualizing the various facets which should be considered in attempts to evaluate current personnel preparation efforts, it is helpful to begin with the general conceptual framework for evaluating educational programs which has been formulated by Robert Stake (1967).[2] In brief, Stake emphasizes that "the two basic acts of evaluation" are description and judgement, and both are needed if programs are to be understood (see Figure 8). In addition, his conceptualization clarifies that, if a program is to be fully described and judged, there must be data (a) for evaluating the functional contingencies between antecedent conditions, transactions, and outcomes, (b) for evaluating the congruence between what is intended and what occurs, and (c) for making absolute comparisons (based on standards of excellence) and/or relative comparisons. Obviously, such a matrix of data would provide much of the information needed for describing, demonstrating the effectiveness of, and improving a program's basic propositions and

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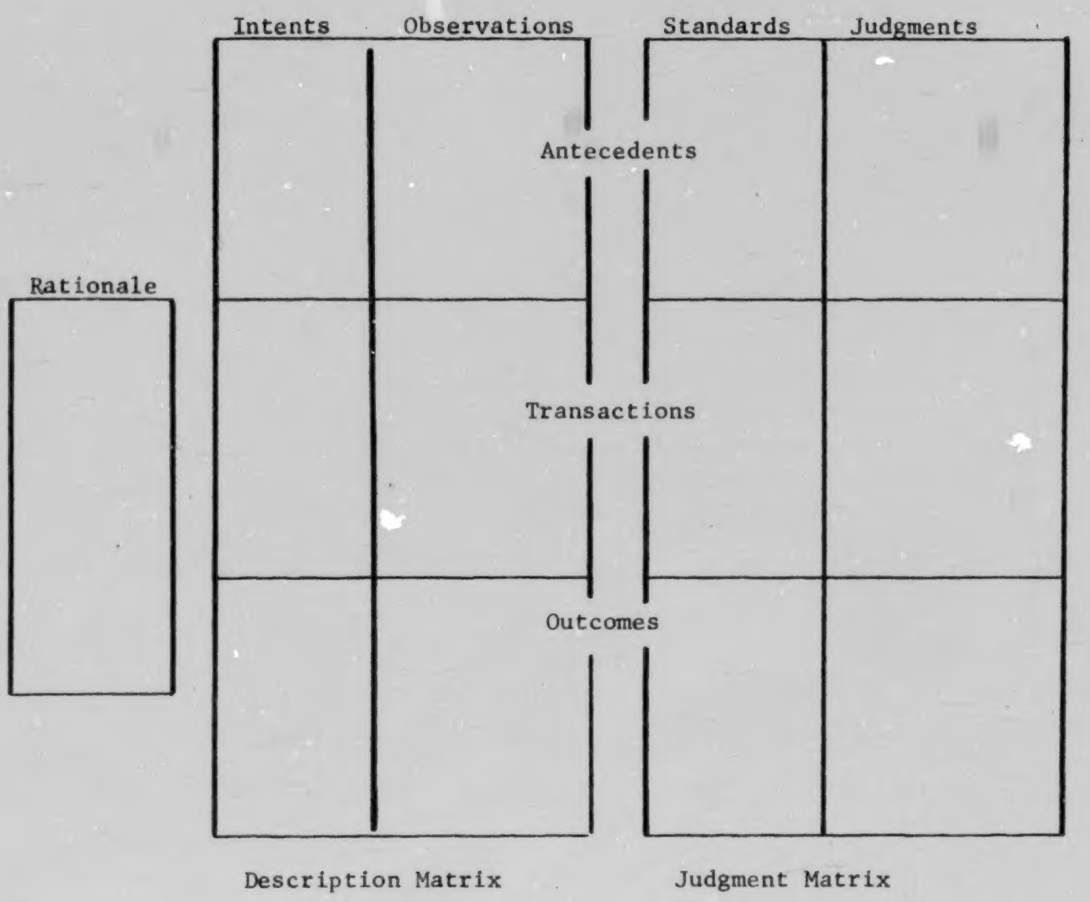
[2] Additional resources with which the concerned reader may want to become familiar are presented in the resource guide on evaluational planning (Duchon, Hull, and Carpenter, 1973) which is designed as a companion work to this monograph.


Intents
Observations
Standards
Judgments
Rationale
Antecedents
Transactions
Outcomes
Description Matrix
Judgment Matrix

A layout of statements and data to be collected by the evaluator of an educational program.

Figure 8. Stake's Graphic Representation of his Conceptual Framework for Program Evaluation*

*Reprinted by permission of publisher.

goals, content and process, as well as for making general decisions about such programs.

A number of factors should be considered in conceptualizing the nature and scope of personnel preparation program evaluation. First, it is clear that Stake's framework has direct application in efforts to evaluate programs which prepare education professionals. Such evaluation, however, encompasses the direct application of the framework not only to such a program, but also to specific district and school programs in which the preparation program's staff, participants, and graduates are involved. For example, in addition to investigating the impact on the program's participants and graduates (such as their ability to plan and implement a special lesson), data should be gathered on the pupils with whom they work (such as whether the pupils learn the skills included in the lesson) and on the effect the program's participants and graduates have on the districts and schools in which they are employed (such as whether they stimulate changes in basic policies regarding methods and materials).

Second, in evaluating any educational program, it is important to determine not only the congruence between what is intended and what occurs, but also to investigate possible major side effects. For example, most programs do not have well delineated objectives in the affective domain, and therefore, data often is not collected regarding the program's impact in this area. This is unfortunate since two programs which produce professionals of equal ability with reference to stated performance criteria may produce individuals with very different attitudes regarding the field of education.

Another critical variable to be considered is the time at which the evaluation is carried out. It is evident that all formal educational programs are lengthy and that educational programming is most appropriately patterned and sequenced with reference to long-range goals rather than immediate instructional objectives. Indeed, the most relevant criterion for evaluating a program's success is the long-range impact, and thus it should be recognized that the use of immediate objectives as criteria may be misleading. For example, the positive or negative impact of something learned today may only be reflected at a later time; furthermore, the fact that something is not learned at a particular moment is not tantamount to saying that it should have been learned at that moment, for it well may be that it will be more easily mastered at a subsequent time. Thus, in view of such temporal factors, it is evident that the differences between two groups of individuals from different programs may not be apparent at the conclusion of their respective programs but may be very evident two years later.

Further complications arise from the impact of individual difference variables. For example, a procedure may prove to be more effective for an individual with a certain pattern of personality characteristics than for a person with a different pattern.

And, of course, it is necessary to consider the amount of economic support (time, staff, space, etc.) required to bring about particular effects. For example, the accomplishments of a new procedure must be evaluated with reference to cost factors in order to determine its feasibility for large scale implementation.

Finally, since all educational programs need to be improved, a comprehensive evaluation of a program requires an investigation of the degree to which evaluative feedback is used systematically to improve various aspects of the program, e.g., content and process.

Critical Problems Related to Evaluating Programs

As the preceding discussion suggests, comprehensive program evaluation is complex. In addition to this complexity, there are some serious problems which must be overcome before the comprehensive evaluation of personnel preparation programs in education can be accomplished.

Besides the very real practical problems related to attitudes toward and the financial costs of comprehensive program evaluation, there are a number of problems related to what should be measured and how to measure it. One of these critical problems stems from the failure of educators to specify the knowledge, skills, and attitudes which are to be developed by the program. Without a clear statement of instructional objectives and the related observables they encompass, those responsible for evaluating the program are seriously handicapped in their efforts (a) to establish appropriate priorities regarding what is to be investigated and what the performance indicators are to be, (b) to evaluate (sample) the congruence between what is intended and what occurs, (c) to investigate possible side effects, and so forth.

Another critical problem is that appropriate measures and procedures for evaluating some very important aspects of programs have not been developed. And the reason for this state of affairs is not simply the absence of the knowledge and skill needed to develop them. (It seems reasonable to suggest that many program evaluators and developers of measures and procedures used in evaluative investigations tend to limit their efforts to those areas which our society values and rewards.) Whatever the reason, however, the lack of availability of appropriate measures and procedures has made it impossible, to date, to even contemplate fully evaluating an educational program.

The resolution of the above problems will require considerable time and resources, and in the meantime, program evaluation will suffer from a variety of inadequcies. This fact gives rise to another problem, i.e., a reaction against program evaluation. There are many individuals and groups who would prefer to see no evaluation rather than take a chance that a program will be evaluated in an inadequate (unreliable and/or invalid) fashion. These critics point to those instances when evaluative procedures and data have been misused and abused. For example, some special educators point to the tendency (e.g., on the part of legislators) to have special education programs evaluated _primarily_ in terms of immediate achievement benefits to children and cost accounting procedures. (There has been a trend to judge a personnel preparation program's benefits in terms of immediately measurable improvement in the "3 R's" among the children served by the personnel prepared in that program; moreover, it has been suggested that the amount of improvement should be judged with reference to whether it warrants the fiscal expenditure per program participant and per pupil. On the surface, such criteria may appear to be reasonable. However, in light of our current limited knowledge regarding effective strategies for educating many groups of children, e.g., exceptional children, this level of evaluation is probably premature and is certainly not comprehensive enough.) Clearly, the use of such inappropriate evaluative criteria is lamentable. Equally lamentable, however, is the tendency to suggest that such misuses of the evaluative process justify the continuing absence of formal evaluation which characterizes so many education programs. The misuses and abuses of the evaluative process do not invalidate the importance and usefulness of evaluation. Indeed, it should be emphasized that much of the criticism which has been directed at the inadequacy of current procedures, "and the unfairness of decisions based on them, represents a localizing in the tool of the blame for the lack of clarity which characterizes the thinking of citizens of this democratic society, for it is the citizenry who determine the values and policies which direct the use of society's technical methods" (Adelman, Zimmerman, and Sperber, 1969, p. 130). Thus, the reaction against program evaluation is viewed as inappropriate; this, of course, does not make the problem any less real.

Obviously other examples could be offered of problems which confront program evaluators. However, it is felt that the problems which have been discussed are, currently, the major deterrents to the comprehensive evaluation of training programs in education.

Some Thoughts on Evaluating Special Education Programs

Within the limitations set by such problems as those which have been described above, any program should attempt to evaluate as wide a range of impact as possible using procedures and standards which allow for objective and generalizable conclusions. For example, a comprehensive evaluation might encompass an investigation of the program's impact on (1) the participants, (2) the pupils who are served directly and indirectly as a result of the efforts of the program's participants and graduates, and (3) the field in general. The primary emphasis in such an evaluation should be on describing and judging the congruence between stated instructional objectives and what is accomplished, but there also should be an investigation of possible major (positive and negative) side effects.

To be more specific about the nature and scope of such evaluative efforts, an investigation of the program's impact might focus on:

1) the participants with particular reference to (a) the acquisition of new competence (knowledge, skills, and attitudes), e.g., new teaching procedures, and (b) the modification of existing competence, e.g., acceptance of personal responsibility for acquiring needed competence, involvement in the field;

2) the pupils whom they serve with particular reference to (a) the remediation of underlying process deficits, interfering behaviors, or both, e.g., perceptual deficits, extreme withdrawal and passivity, (b) the acquisition of needed prerequisites, e.g., attending, listening, (c) achievement in basic school subjects, e.g., reading, language, mathematics, and (d) relevant other behaviors and attitudes, e.g., self-direction, self-evaluation, inter-student cooperation, interests, values, feelings toward school;

3) the field with particular reference to (a) the number of professionals, paraprofessionals, and recruits who are influenced directly and indirectly, (b) effects on specific school districts and communities which probably would not have occurred if the program did not exist, e.g., changes in policies and practices related to classroom methods and materials, staffing, in-service training, and so forth which were

facilitated by the program's staff, students, and/or graduates, (c) effects on specific institutions of higher education, e.g., changes in policies and practices related to pre-service training, and (d) effects on educational thought in general, e.g., changes in conceptualization regarding the purposes and processes of formal education.

Some of the key steps in evaluating (and studying) educational programs are seen as follows:

1. In studying or evaluating educational programs, it is important to start with a detailed understanding of the problem, hypotheses, evaluation need, etc.

2. With a clear understanding of the "problem" being addressed, it generally is possible to translate such a problem into a set of major questions which should be answered, e.g., How effective are teachers in a particular school with reference to teaching reading? Do kindergartners with perceptual-motor problems have more difficulty learning to read than those without such problems?

3. As a first step in answering questions which have been formulated, it is necessary to specify the relevant descriptive data (intended and unanticipated outcomes, transactional, and antecedent variables) which have a bearing on the questions (e.g., see Figure 9 and Table 9 for a description of some key variables).

4. After specifying the data, it is necessary to specify the procedures which can be used to gather such data. As a brief summary, it may be noted that pertinent data can be gathered by employing rating scales (Likert and Guttman scales), checklists, questionnaires, and

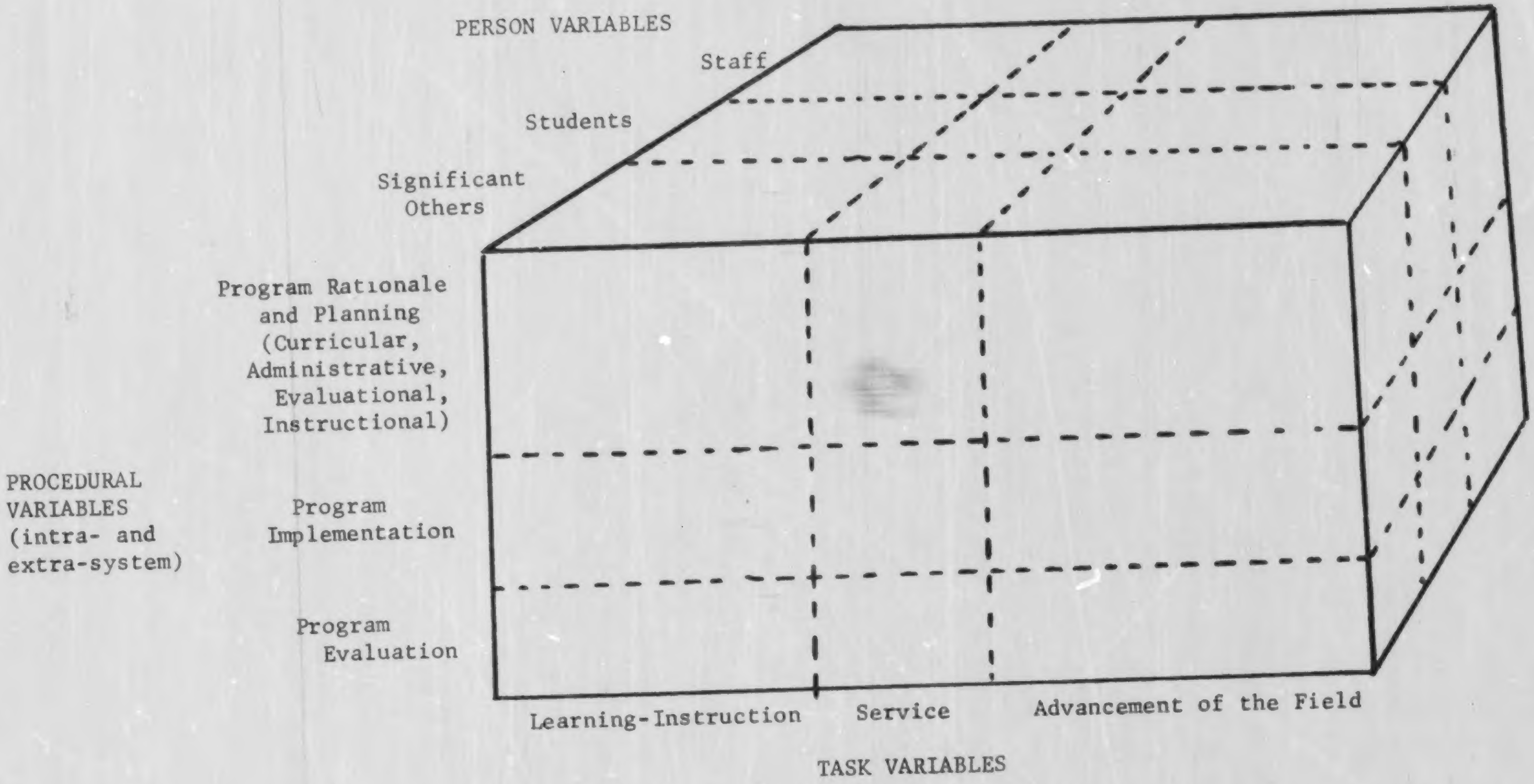

PERSON VARIABLES
Staff
Students
Significant Others
PROCEDURAL VARIABLES (intra- and extra-system)
Program Rationale and Planning (Curricular, Administrative, Evaluational, Instructional)
Program Implementation
Program Evaluation
Learning-Instruction
Service
Advancement of the Field
TASK VARIABLES

Figure 9. Some Key Variables to be Considered in Analyzing Educational Programs

TABLE 9

Some Key Variables to be Considered in Analyzing Educational Programs[1]

Categories of
Person Variables

Major Focus on:
STAFF, STUDENTS, SIGNIFICANT OTHERS

I. Types of Characteristics
  A. Group Identification Label (Roles)
    1. Staff
      (e.g., aide; assistant; regular teacher; specialist; professor; change agent; counselor; consultant; administrator; evaluator; researcher)
    2. Students
      (e.g., pre-school, elementary, or high school pupils; exceptional children; paraprofessional or professional in pre/ in-service training)
    3. Significant Others
      (e.g., relatives of students; interest group members; board of education members; trustees; legislators; taxpayers)
  B. Demographics
    (e.g., numbers involved; ethnicity; s-e-s; sex; age; geographic location; agency-organizational affiliations)
  C. Individual Differences
    (e.g., I.Q.; training; experience; personality)
  D. Criteria Used in Selection-Placement-Termination-Reassignment
    (e.g., performance; age; I.Q.; ethnicity; sex; s-e-s; type of task focus; number of course units or hours completed; homogeneity)

II. Areas of Involvement
  A. Areas of Task Focus
    (e.g., learning-instruction; service; advancement of the field)
  B. Areas of Procedural Focus
    (e.g., formulation of program rationale; program planning, implementation, and evaluation)

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[1] At the outset of any such analysis, it is necessary to determine the nature and scope of a program's rationale, i.e., (a) the general orientation to the task of personnel preparation or school instruction, (b) the specific purpose assigned to and/or adopted by the program, and (c) the implications for desired program outcomes derived from the relevant body of theoretical and empirical knowledge.

III. Degree and Quality of Involvement and Commitment
  A. Personal
    (e.g., degree of responsibility assigned and assumed; satisfaction; quality of performance)
  B. Interpersonal
    (e.g., type of interaction--student-student, student-teacher, teacher-administrator, staff-interest group; number of interactions; time spent; quality of interaction)

Categories of Task Variables[2]

Major Focus on:
LEARNING-INSTRUCTION, SERVICE, ADVANCEMENT OF THE FIELD

I. Areas of Task Focus
  A. Focal Areas for Learning-Instruction of Pupils
    1. Basic School "Subjects"
      (e.g., reading; math; languages; science; history; music; dance; art; sex education; physical education; hygiene; manual arts; vocational preparation; abstract thinking; creativity; aesthetics; social-emotional development; moral development)
    2. Prerequisites for School Learning
      (e.g., attention; listening; following directions; cooperative functioning with peers and adults; self-control)
    3. "Remediation" of Interfering Behaviors and Underlying Process Deficits (e.g., defiance; phobic behavior; receptive and expressive language deficits; memory deficits; auditory and visual perceptual deficits; gross and fine motor coordination problems)
  B. Focal Areas for Learning-Instruction of Education Personnel
    1. Tools Needed for Learning and Performing in the Program
      (e.g., procedures for inquiry and for task-oriented communication)
    2. Rationales for Educational Programs
      (e.g., societal; political; economic; ideological; knowledge base)

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[2] It is important to keep in mind that the variables in this table overlap and interact with each other. For example, in studying the instruction of education personnel who are to have an effect on pupils or on other education personnel, the investigator must be concerned with many of the person, task, and procedural variables listed in this table.

3. Program Planning
(e.g., curricular; administrative; evaluational; instructional)
4. Program Implementation
(e.g., initiation of planned program; formative evaluation; modification of planned program; ongoing management of program)
5. Program Evaluation
(e.g., description; judgement)
6. Tools Needed to Help Advance the Field
(e.g., methods of inquiry; development and diffusion of prototype program models)

C. Focal Areas for Service
(e.g., persons; community; groups; agencies; associations; general public; the field of education)
D. Focal Areas for Advancement of the Field
(e.g., research--applied, basic, program oriented; development--methods, materials, programs; diffusion--dissemination, installation, maintenance)

II. Types of Task Focus
A. Types of Learning-Instructional Focus
(e.g., facts; concepts; behaviors; skills; attitudes)
B. Types of Service
(e.g., information resource and resource finding; personal, familial and vocational counseling; consultation; provision of space and manpower for non-curricular activity)
C. Types of Field Advancement
(e.g., descriptive, correlational, and experimental research; prototype and mass production of innovations)

III. General Task Characteristics
A. Quantitative Dimensions
(e.g., actual and perceived difficulty; number of tasks to be accomplished; sequencing of tasks)
B. Qualitative Dimensions
(e.g., intrinsic and extrinsic value)

Categories of Procedural Variables

Major Focus on: CURRICULAR, EVALUATIONAL, ADMINISTRATIVE, AND INSTRUCTIONAL FACETS OF THE PROGRAM

I. Areas of Procedural Focus
A. Focal Areas for Rationale and Planning Activity
1. Shaping Forces
(e.g., socio-political-eonomic; ideological)

2. Use of Knowledge Base
   (e.g., procedures used to derive conceptual and practical orientations from the body of knowledge with reference to such topics as growth and development; learning and performance; motivation; instructional content and process; assessment, evaluation, and research processes; system ecology; field of education)
3. Intended Instructional and Non-curricular Antecedents, Transactions, and Outcomes
   (e.g., criteria to be used for selection-placement-reassignment in a program, class, group, activity; planned use of methods, materials, and behavior settings; planned instructional, service, and research objectives)

B. Focal Areas for Program Implementation
   1. Initiation of Planned Program
      (e.g., procedures used to facilitate the participant's activation, focus, initaition of activity, maintenance of participation, knowledge of results)
   2. Formative Evaluation
      (e.g., procedures used to describe and standards used to judge instructional and non-curricular antecedents, transactions, and outcomes, procedures used in decision-making regarding needed modifications)
   3. Modification of Planned Program
      (e.g., criteria for change; procedures used to reformulate rationale and plan for the curricular, evaluational, administrative, and instructional facets of the program)
   4. Ongoing Management of Program
      (e.g., procedures used to manage materials, methods, behavior settings)

C. Focal Areas for Program Evaluation
   1. Description
      (e.g., procedures used to identify and measure intended and unintended antecedents, transactions, and outcomes)
   2. Judgment
      (e.g., standards used to make judgments; use of judgments in decision-making)

II. Types of Procedural Focus
   A. Methods
      1. Procedural Models
         (e.g., oriented to--information processing, social interaction, person, behavior modification; oriented to--norms, individuals; degree of structure)
      2. Activities
         (e.g., assessment; instruction; input, practice, and communication-oriented experiences)
      3. Techniques
         (e.g., stimulus, response and feedback characteristics--variations with reference to modality involved; intensity;

duration; patterning; cueing; overt or covert responding; variations with reference to incentives and reinforcement such as intrinsic-extrinsic, formal-informal, systematic-unsystematic, amount, frequency, reward, punishment)

B. Materials
1. Procedural Purpose
(e.g., assessment; instruction; non-curricular)
2. Medium
(e.g., machines; films, audio and visual recordings, packaged programs, books, tests, and other verbal and graphic representations; special apparatus and real objects; people)
3. Message
(e.g., facts, concepts, skills, behaviors, attitudes)

C. Behavior Setting
1. Organizational Format
(e.g., nature of staffing pattern, student grouping, structure, supervision)
2. Locale and Scope
(e.g., public-private; school-community; degree of uniqueness; sparse-ample facilities and equipment; minimal-maximal availability and use)
3. Climate
(e.g., nature of interpersonal, intrapersonal, and physical environment)[3]

D. Transitioning Between Experiences
(e.g., criteria used to determine need for transition such as performance, age, number of course units or hours completed; procedures used to facilitate transition)

III. General Procedural Characteristics

A. Quantitative Dimensions
(e.g., actual and perceived difficulty; number of procedures involved; duration, pacing, and rate; sequencing of experiences)

B. Qualitative Dimensions
(e.g., intrinsic and extrinsic value)

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[3] It is important to emphasize that it is the interaction key variables in a specific program (or class) which yields the overall environment, e.g., physical, intellectual, emotional, and moral climate.

surveys, objective and projective tests, essays, semantic differential, Q sorts, anecdotal records, systematic analyses of products and performance, systematic records of specific accomplishments, directly solicited evaluations, measures of elements of such constructs as anxiety, locus of control, independence and self-control, expectations and aspirations, and so forth. (Obviously, whenever possible, standardized procedures should be used.)

With reference to conceptualizing the potential measures which might be used, Popham (1971) has suggested the consideration of two dimensions: "(1) the measurement stimulus situation and (2) the type of . . . response required." As he states, a response can be observed and measured under either natural (e.g., classroom social interactions) or manipulated (e.g., test situations) conditions, and such responses can be either a product (e.g., an essay) or direct behavior (e.g., reading aloud). With reference to the two types of responses, it should be emphasized that (a) products will be the result of selecting from alternatives (e.g., multiple choice questions) and/or the construction of a response (e.g., an essay); (b) behavior can be recorded (visually and/or auditorily) for later analysis; (c) the focus may range from "molar" to molecular" responses; and (d) the response may or may not be made anonymously. In addition, it may be noted that many measures have a "reactive" effect, and, therefore, unobtrusive measures should always be considered and given high priority.[4]

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[4] The two most critical considerations with reference to the measures selected, of course, are the degree to which they can be used to produce reliable data (e.g., over time, over situations, between raters) and the degree to which such data has validity (e.g., content validity, predictive validity).

The types of people who can provide the desired data may range from individuals involved in a particular program to representatives of a variety of external interest groups, institutions, and agencies. The most likely sources are a program's students and instructional, administrative, and support staff, qualified individuals who are not affiliated with the program (who will be impartial), members of policy-making and other interest groups, relatives of students, and subsequent employers and colleagues.

5. In addition to designating the procedures to be used in gathering the desired data, it also is necessary to specify the design to be used. In this connection, see Campbell and Stanley (1971) for discussion of pre-experimental, experimental, and quasi-experimental designs (e.g., the one-shot case study, the one-group pretest-posttest design, the static group comparison, the pretest-posttest control group design, the posttest-only control group design, the time-series experiment, counterbalanced designs). The design (and measures) chosen should be based, to a great extent, on decisions regarding the type of standards which one wants to use in judging the descriptive data which is to be gathered, e.g., whether the standards used are to be relative (norm referenced) or absolute (criterion referenced).[5]

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[5] To clarify this point further, it may be noted that the nature and scope of the sample(s) ("responders") are critical considerations, e.g., too small samples or non-representative samples can result in means and standard devistions which are poor approximations of the parameters of populations which are to be compared; the absence of appropriate comparison (control, contrast) groups can make it virtually impossible to use collected data to answer questions which may be of major concern; and so forth.

6. Designation as to time and place for data collection, in part, will be determined by the design which is chosen and, in part, by pragmatic factors, e.g., available person and material resources, cooperation of the people who are the sources of data, and so forth.

As the examples offered in this section suggest, programs which prepare special educators can and should be evaluated on many levels. In addition, it should be evident that the concerns, issues and problems related to evaluating personnel preparation programs in both general and special education are not substantively different and that the process of evaluating such programs is in its early developmental stages.

Concluding Statement

Until there is a more definitive body of knowledge in the field of education and further development with reference to the processes by which we prepare professionals and evaluate such preparation, it seems unlikely that preparation programs for educators can be evaluated satisfactorily. Nevertheless, such programs must be evaluated, and those responsible for the programs should be held accountable. However, the term accountability must not be interpreted simplistically, or in a narrow context. At this time, appropriate program evaluation in education requires more than the systematic collection of immediate achievement and cost accounting data. In particular, it is felt that programs which prepare special educators should be evaluated comprehensively in terms of their general contribution to current educational services, training, and research, rather than in terms of such narrow criteria as pupil achievement in the "3 R's" or per capita cost with reference to immediate pupil benefits. Clearly, there is a great deal which still must be learned about educating youngsters, especially exceptional children, preparing professionals, and evaluating educational programs; we cannot afford to ignore the implications of these needs in the rush to establish strategies for accountability.[6]

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[6] See Appendix VI for a discussion of personnel certification.

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Chapter 8

The Development and Diffusion of Prototype Program Models

The discussion in this monograph just skims the surface of the multitude of issues and problmes which confront those professionals who are concerned with developing effective personnel preparation programs. The conceptual view presented purposively has been discussed in generic terms. With such a general framework, it is relatively easy to develop specific conceptualizations for prototype pre- and in-service programs (e g., our program for the preparation of resource personnel who are to have an impact upon children with learning/behavior problems).

But after such a prototype is conceptualized an validated, then what? This brings us to the topic of diffusing (disseminating, installing, and maintaining) prototype program models. As Sarason (1971) has pointed out in this context:

> Good ideas and missionary zeal are sometimes enough to change the thinking and actions of individuals; they are rarely, if ever, effective in changing complicated organizations (like the school) with traditions, dynamics, and goals of their own. [p. 213]

If this is the case (and I think most evidence indicates that it is), it is unfortunate that we seem to be more concerned with "spreading the word" (disseminating) than we are in the comprehensive diffusion of innovative approaches for personnel preparation. Still, this tendency is understandable since we know a good deal more about ballyhooing an idea than we know about the process by which comprehensive and widespread institutional change can be accomplished.

In order to understand what is involved in effecting such widespread change, it is necessary to rely on the reported experiences and thinking of others (e.g., Carlson, Gallaher, Miles, Pellegrin, and Rogers, 1965; Bennis, 1966; Guba, 1968; Bennis, Benne, and Chin, 1969; Sarason, 1971; Havelock, 1973)[1] and on one's own empirical and conceptual efforts. What follows is a discussion of the procedures by which prototype programs might be developed, disseminated installed, and maintained. We start with the assumption that validated prototype programs need to be developed and spread and that various interest groups (e.g., governmental bodies, educators, private organizations) want to facilitate such development and diffusion.[2]

Developing a Feasible Prototype

As a basic premise, let us accept the idea that it is preferable to base all program development on as solid a research foundation as is feasible. Given such a research base, the development of feasible prototype models can be viewed as involving four major steps: (1) the formulation of generic and specific conceptualizations, (2) analysis of the needs related to translating specific conceptualizations into practical demonstrations, (3) generic and specific tooling up activity in preparation for practical demonstrations, (4) the actual implementation and evaluation of practical demonstrations.

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[1] The reader who wants to pursue the topic of planned change in depth can begin with two annotated bibliographies. L.M. Maquire, S. Temkin, and C.P. Cummings, An annotated bibliography on administration for change, 1971. Research for Better Schools, Inc., 1700 Market St., Suite 1700, Philadelphia, Pennsylvania 19103. E.A. Campbell, M.C. Havelock, R.G. Havelock, J.C. Huber, and S. Zimmerman, Major works on change in education, an annotated bibliography. Appendix C in R.G. Havelock, The change agent's guide to innovation in education. Englewood Cliffs: Educational Technology Publications, 1973.

[2] Guba and Clark (Guba, 1968) discuss the theory-practice continuum as involving four phases or stages, i.e., research, development, diffusion, and adoption. For purposes of this paper, I include research under development and adoption under diffusion.

More specifically, the first step in developing a prototype program involves the formulation of a general conceptual view of systematic efforts designed to prepare personnel from which a specific program model is derived. This monograph represents an attempt to clarify, in general, what is involved in formulating such conceptualizations. From this general framework, a number of specific program models might be conceptualized. The various examples from our program which are included in this monograph and elsewhere (Adelman, 1973) are suggestive of one specific conceptualization.

The amount of such conceptual activity in the field has been quite limited until recently. It has been encouraging in the past few years to see governmental support of such activity as the nine elementary teacher education models and a number of special projects such as the one which has resulted in the production of this monograph. It will be unfortunate, indeed, if more activity of this nature is not supported, for such conceptualizations are viewed as a major part of the foundation upon which a sound program is built.

Once a specific prototype is formulated, an analysis can be made of what is needed in order to translate the idea into a practical demonstration, i.e., what is needed in terms of materials, personnel, facilities, and so forth, and, of course, what all this means in terms of dollars. It should be emphasized that the purpose of such feasibility studies is not to find which approach is the least expensive. Rather, the intent simply is to describe needs and costs. Judgement as to whether it is feasible to proceed with a given approach is based on such considerations as whether the pertinent decision-makers like the prototype and whether the necessary resources are available for a practical demonstration and for its diffusion if it is effective.

While our project did not formally encompass a feasibility study phase, our conceptual and practical activity lead us to suggest some general and very basic needs. For example, at this point, we would emphasize that tasks such as curricular planning require a good deal of resources, particularly expertise with regard to curriculum development from both disciplinary and pedagogical orientations.

And, we might as well face it.

Most training programs do not have the resources to develop sophisticated curriculum and evaluation packages for the type of systematic, competency-based program alluded to above. And, even if a few programs do have such capability, it doesn't make much sense for any program to have to develop such packages unilaterally, and it makes even less sense for such packages not to be shared with other programs.

From the perspective of a program planner, it seems logical to me that generic curriculum and evaluation packages should be developed by curriculum and evaluation experts. The efforts of the planners of a specific program then could be directed toward adapting such packages to the particular needs of their program. (Such instructional planning along with the tasks involved in implementing the instructional and evaluational phases and administering the program are comprehensive enough responsibilities to occupy the talents of any program's staff.)

Of course, for expertly developed curricular and evaluative packages to become a reality will require research and development support from the public and private sectors. For such support to become a reality will require concerted efforts on the part of responsible professionals in communicating to funding agency and corporate decision makers that such activity needs to receive high priority. Also, in this connection, state and federal agencies should not be allowed to act as if every program staff has the ability to start from scratch in planning a program. There is a need to build a strong foundation upon which such programs can build. Without such a foundation, I would suggest that program planners cannot expect or be expected to build very good structures, and the majority of the personnel prepared cannot be expected to be highly effective.

As the above comments suggest, feasibility studies point both to generic and program specific needs. Therefore, tooling up activity may involve both generic and program specific activity. In meeting generic needs, the products of the tooling up activity potentially should be useful for all programs, e.g., generic, curricular and evaluational packages. As indicated above, probably the resources needed to develop such products will be beyond those available to any one program, and, thus, major support will be required from the public and private sectors. If such generic tooling up activity is accomplished, it can be anticipated that the activity required to tool up for a specific prototype program will be reduced greatly.

The final step in the development of feasible prototypes, of course, is the implementation and evaluation of the demonstration program. This step involves: (1) the initiation, ongoing assessment, modification, and ongoing management of instructional and non-curricular activities and (2) the description and judgement of the program's antecedents, transactions and outcomes.[3] Given that the demonstration is judged to be successful and worth spreading, the next concern is with its diffusion.

Diffusion of Prototype Models

The term diffusion as used here is meant to connote the process by which a prototype model not only is heard about (disseminated), but is installed and maintained in other situations where it is needed. Since so little is known about how to accomplish this process with reference to school programs, the following is offered for whatever heuristic value it may have.

Based on the pertinent literature and relevant personal experiences, it seems reasonable to suggest that any proposed strategy for institutional change must provide at least for the following if an appropriate climate and context for change is to be created:

1) appropriate incentives for change,

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[3] These tasks have been discussed in the earlier chapters and in other resources which have been cited.

2) the presentation of an appropriate range of relevant alternatives for change so that an institution may select one which is workable within the institution's context and is acceptable to those who will carry it out,

3) establishment of mechanisms (e.g., special training, resources, rewards, procedures designed to improve organizational health) to facilitate the effective functioning of the person(s) who takes or is given responsibility for installing changes,[4]

4) person(s) who perform the role of change agent by behaving more as a pragmatic than as a "Utopic" advocate (Gallaher, 1965),[5]

5) appropriate structuring of the scope and timing of change (e.g., planned transition or phasing in of changes),

6) appropriate feedback regarding progress of change activity,

7) ongoing, supportive mechanisms to maintain substantive changes as long as they remain appropriate.[6]

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[4] Such facilitative mechanisms may be directed at change agents and/or at persons who are to change. For example, the change agent may need special training regarding how to facilitate a particular change; at the same time, persons who are to change may need training to develop pre-requisite knowledge, skills, and attitudes before they can be expected to carry out a particular change. Examples of other mechanisms which may be needed are: released time, extra-clerical help, in situ demonstrations, communication oriented meetings, frequent indications of support for a given change by the organization's leaders, "influentials", and gatekeepers.

[5] Gallaher (1965) states that there is "a large body of research to support the basic assumptions underlying the pragmatic model, that is that people will more readily accept innovations that they can understand and perceive as relevant, and secondly, that they have had a hand in planning (pp. 41-42).

[6] For example, Schalock and Cooper (1973) suggest that the support functions needed to operate a competency-based teacher education program should be provided by five support sub-systems: (1) program evaluation and student assessment, (2) cost accounting, (3) maintenance, (4) student selection and welfare, and (5) staff selection, training and welfare.

Awareness of these needs[7] leads me to suggest the following procedures for facilitating national diffusion efforts (see Table 10).

While the usual forms of dissemination (e.g., reports, journal articles, monographs) have their uses, for purposes of diffusion a more systematic and enticing approach seems indicated. Thus it is recommended that each validated prototype be described in a federal or state agency "Request for Proposal" (RFP) which offers program development grants. In this way, those who are interested in developing new programs or revamping existing programs could receive support if they are willing to install a given model. The initial funding could be for regional installation of a particular prototype. For example, if there are three validated prototypes to be disseminated all three could be installed in a given region. This would make a demonstration of each prototype available in each region of the country. (It is recognized that a prototype may have to be adapted to meet the specific needs of a particular region.)

In selecting which applicants to fund for the development of these regional demonstrations, it would seem to be important to choose from among those who document (a) a need for and the capability of developing such a program (given the grant funds) and (b) a commitment, resource base, and mechanism for carrying on after the development grant funding ends.

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[7] Another way to think about the characteristics of a change process is in terms of the inhibiting factors which must be overcome. Miller (1967) suggests (a) three general inhibiting factors--traditionalism, laziness, and fear and insecurity, and (b) seven (less general) educational factors inhibiting change--rut of experience, administrative reticence, educational bureaucracy, insufficient finances, community indifference and resistance, inadequate knowledge about the process of change, and inadequate teacher education programs.

TABLE 10

Major Steps Proposed for the Development and Diffusion of Prototype Program Models on a National Scale[*]

DEVELOPMENT OF FEASIBLE PROTOTYPE MODELS

1. Generic and Specific Conceptualizations
2. Analysis of Needs Related to Translating Specific Conceptualizations into Practical Demonstrations
3. Generic and Specific Tooling-up Activity for Pracical Demonstrations
4. Practical Demonstrations--Implemented and Evaluated

DIFFUSION (Dissemination, Installation, Maintenance)

1. Dissemination of All Validated and Feasible Prototype Descriptions
    a. Usual mechanisms (reports, journals, monographs)
    b. Government initiated "Request for Proposals" describing prototypes and offering program development grants
2. Selection of Applicants who Document:
    a. A need for and a capability of developing such a program
    b. A commitment, resource base, and mechanism for carrying on after program development funding ends
3. Program Development Grant Funding of Selected Programs
    a. Initial funding restricted to support for the development of rationally based demonstrations (3 or 4 different prototypes per region)
    b. After regional demonstrations are implemented, funding of other applicants who meet criteria
4. Establishment of a Network of Ongoing Accessible Support Mechanisms
5. Support for the Development of Models for Inter-Program Cooperation
6. Evaluation of Diffusion Efforts

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[*] A model for diffusion on a local level is presented in Facilitating Educational Change and Preparing Change Agents (Adelman, 1973).

It is assumed that to facilitate an applicant's efforts to install and maintain the program (1) the original prototype (or at least its personnel) will be available for purposes of consultation (training, demonstrations, and so forth with reference to planning, implementing, and evaluating such a program); and (2) other support mechanisms will be accessible (e.g., technical support).

For these assumptions to be viable, it will be necessary to provide some continuing grant funds to the original prototype programs (at least for consultation activity), and it would be important to facilitate the establishment of an ongoing, accessible, and comprehensive network of other program support mechanisms. Such additional support mechanisms should be designed to meet the developmental and maintenance needs of adopted/adapted prototypes. Included in such a network would be information and material exchanges, technical support, and so forth. Participants in such a network could come from both the public and private sectors.

Once the regional demonstrations are implemented, program development grant RFP's could be issued again. At this point selected applicants would be able to learn the installation process at the nearest regional demonstration program.

With the installation of prototype programs at an increasing number of sites, the problem of maintenance becomes more critical. The network of support mechanisms mentioned above, of course, would be a very important aid. As another way of facilitating program maintenance, it would be desirable for programs to establish direct mechanisms for inter-program cooperation. Schalock (1972) has suggested one such mechanism, i.e., a statewide network of Centers for the Preparation of

Educational Personnel. Since we know so little about such mechanisms, there is a need to stimulate the development of ther models for program cooperative functioning.[8]

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[8] In a letter to Richard Whelan, Director of the Division of Training Programs, BEH, in January, 1973, I suggested the following:

"As I know you are aware, if available funds are to be used more effectively, it is necessary to have a better needs analysis (of personnel preparation needs) than currently exists. There are, of course, many ways in which such an analysis might be accomplished. I want to emphasize the view that the strategy chosen should accomplish not only the needs analysis but should be designed to have a positive reactive impact in terms of increased communication, understanding, and cooperation among those who are concerned with personnel preparation on local, state, regional, and national levels.

As a rough and simplified example of such a strategy:

(a) the Division could request a statement from state directors regarding how a limited amount of catalytic funds (e.g., the amount of federal training funds from all sources currectly being expended in the state) might be used in the state to meet pre- and in-service training needs; (Probably this should be a three year plan and should include an indication of how and when the state will assume most of the costs involved so that federal BEH and BEPD support can be minimized or eliminated entirely. Perhaps it would be recommended that the state director meet with training people throughout the state in order to arrive at such a plan, but the final statement at this point in the process would be the state director's. The Division should be prepared to provide the necessary funds to ensure that this statement is done properly.)

(b) on receipt of the state director's plan, the Division could then request reactions to the plan from training people throughout the state, particularly with reference to alternative recommendations, e.g., a specific plan does not recognize a contribution the institution or agency can make and can take this opportunity to indicate such a contribution and its significance and cost; (Here too, the Division should be prepared to provide the necessary funds to ensure that this step is done properly.)

(c) if there are major discrepancies between the plans submitted by the state director and the training people, representatives from the Division (staff and consultants) could meet jointly with all parties concerned to help clarify, mediate, and resolve conflicts so that a jointly ratified state plan can be submitted;

(d) upon receipt of all ratified state plans, the Division could convene a national panel to meet and discuss the implications of the state plans and make recommendations for the redeployment of currently available resources.

Again let me emphasize that the above is only an example to suggest that the strategy used to accomplish the needs analysis can also be used

In concluding, I hasten to indicate that I recognize that such a systematic approach to development and diffusion requires a considerable investment of time and money. Important programs rarely evolve rapidly or inexpensively; the space program which has taken us to the moon and beyond is a case in point. Appropriate costs and time schedules, even when they are extensive, are not and should not be discussed as issues. The only issue is what priority we want to place on improving the education of our nation's youth.

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to effect greater communication and perhaps greater understanding and cooperation among those who are interested and responsible for training."

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Concluding Comments

For years, I have heard statements suggesting that personnel preparation programs in education are useless enterprises (e.g., "Good teachers are born, not made!"). In response to similar statements regarding the hopelessness of the current state of public school education in this country, Seymour Sarason (1971) states: "If one asks for justification of such an extreme response, one hears a catalogue of instances and events, all of which confirm that man's capacity to do and tolerate stupid things is vast indeed. As I see it, the sole virtue of this reaction is that it permits one to give up the intellectual struggle to understand why the situation developed the way it has, and to avoid the turmoil and conflict that inevitably confronts one in the world of action. There are few things, if any, that are better than hopelessness for demonstrating the dynamics of the self-fulfilling prophecy" (p. 227).

The question arises then: How can the negative biasing impact of the voices of doom be counteracted?

The answer is suggested by a frequently ignored counterpart of the self-fulfilling prophecy, namesly, the "suicidal prophecy" which Merton (1948) describes as so altering the course of human behavior as to make the prophecy destroy itself. For example, a professor of education who sees a prospective teacher having difficulty relating to pupils may take special steps to help the individual, with the result being that the student goes on to be an effective teacher. "The suicidal prophecy or, as we prefer to call it, the self-correcting prophecy, in effect is synonymous with all successful problem-prevention efforts which are based on predictive evaluations" (Adelman and Feshbach, 1973).

From this perspective, a major task confronting those who want to improve personnel preparation in education is that of institutionalizing positive expectations that current issues and problems can be resolved.[1] Towards this end, what I have tried to do in this monograph is to discuss ways of looking at and thinking about the systematic planning, implementation, and evaluation of personnel preparation programs in education. In addition, I have attempted to present some views on how prototype programs might be developed, disseminated, installed, and maintained. The ideas, conceptions, hypotheses, and practical suggestions are offered as a progress report of one professional's current way of coming to grips with such complex topics. The value of such a progress report, I think, is that it can help to delineate more clearly the issues and problems encompassed by these topics and can provide an additional stimulus for the needed research and developmental activity. My hope is that it has some heuristic value for each reader and for the field as a whole.

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[1] In this connection, it is interesting to note that Merton (1948) states: "The self-fulfilling prophecy. . . operates only in the absence of deliberate institutional controls" (p. 210).

References

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I

Competency-Based and Other Related Personnel Preparation Program Models: Some References

The following references are offered as a sampling of programs which have published extensive enough descriptions to be an aid to the planners of other programs. There is no intention to imply that the cited programs have been validated--only that they have published material which should be of interest to program planners.

In reading about other programs, an excellent starting place is the descriptions of the nine models for elementary teacher education programs funded by the USOE. The nine models were developed by: Teacher's College, Columbia University; Northwest Regional Laboratory; Florida State University; University of Georgia; University of Massachusetts; Michigan State University; University of Pittsburgh; Syracuse University; Consortium of the State Universities of Ohio (University of Toledo).[1] The reader probably should start with some of the reviews which have analyzed the models and then read the original reports of those programs which fit one's needs and interests. Three such reviews are cited below:

Clarke, S.C.T. The story of elementary teacher education models, Journal of Teacher Education, 1969, 20, 283-293.

This article discusses six questions and answers about the models and what they have in common. There is an appendix which compares the nine models in terms of goals, assumptions, extent of lead, highlights of program, unique features, personality change and general comment. This article also gives a full reference to the reports describing each model, including address and price.

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[1] A tenth model, by the University of Wisconsin, was developed without federal funding for its first phase; it was funded for the feasibility study phase.

Burdin, J.L. and Lanzilloti, K. (Eds.) A reader's guide to the comprehensive models for preparing elementary teachers. ERIC Clearinghouse on teacher education and ACCTE, Washington, D.C., 1969.

A major summary of all the models is presented in this resource.

Shaftel, F.R. The Stanford evaluation of nine elementary teacher training models. Final Report. Washington, D.C.: U.S. Department of Health, Education, and Welfare, Office of Education, Bureau of Research, 1969. 78p. (An ERIC document--ED 037 395)

This contains summaries of the models, including their strengths and weaknesses, and has a section where the models are compared and examined in regard to some pertinent questions.

It should be noted that as a second phase in the development of the elementary models, feasibility studies were undertaken and have been reported. In all, the models have and continue to generate a great deal of important activity with reference to improving personnel preparation in education (e.g., see B. Rosner, chairman, The power of competency-based teacher education, report of the committee on national program priorities in teacher education. Boston: Allyn and Bacon, Inc., 1972; J.W. Cooper, M.V. DeVault, et al., Competency based teacher education. Berkeley: McCutchan Pub. Co., 1973).

The nine models for elementary teacher education highlight two of the major thrusts related to personnel preparation in education which have been discussed extensively in recent years, i.e., (1) the need for models and (2) the importance of performance criteria. In several papers included in the Rosner report cited above, Richard Turner explores the relationship between these two thrusts and three other major thrusts, i.e., the development of (a) protocol materials, (b) training materials, and (c) training complexes (see B.O. Smith, S.B. Cohen, and A. Pearl, Teachers for the real world. Washington: American Association of Colleges for Teacher Education, 1969). Turner's conclusion is that "the five thrusts broadly overlap and intersect; indeed, that they are, when properly arranged, responses to different aspects of a single question. . . . What should a teacher education curriculum pre-service and in-service, be like?" (A brief description of each of the five thrusts is presented in Appendix A of the Rosner report.)

After reviewing the above models, a good second step is to survey the comprehensive annotated bibliography entitled:

Performance-based teacher education: an annotated bibliography. Washington, D.C.: American Association of Colleges for Teacher Education and ERIC Clearinghouse on Teacher Education, August, 1972.

This bibliography is divided into several sections. One of them, "Program Descriptions" (p. 6-11) contains references to many descriptions of programs incorporating the idea of performance-based teacher training programs. Most of the materials referred to are in the ERIC system. (Other areas covered in the bibliography are Performance-Based Teacher Education: What Is It?, On What Kind of Performance Should Teacher Education Be Based?, Modules, How Can Teacher Performance be Improved?, How Can Teacher Performance Be Assessed?, Performance-Based Teacher Certification, Attitudes of Professional Organizations and Bibliographies.)

As an indication of the value of the above resource, the following eight references and annotations are quoted directly from the section entitled "Program Description."

American Association of Colleges for Teacher Education. Excellence in Teacher Education. 1971 Distinguished Achievement Awards Program. Washington, D.C.: the Association, 1971. 42p. ED 051 095. EDRS Price: MF-$0.65; HC-$3.29.

This booklet contains brief descriptions of all the teacher education programs submitted in competition for the Distinguished Achievement Award (DAA) of the American Association of Colleges for Teacher Education. The

1971 DAA was awarded to Weber State College in Ogden, Utah, for its "Individualized, Performance-Based Teacher Education Program."

Bicknell, John E., and others. Summer Workshops in Individualization of Instruction, 1970. Selected Papers. Fredonia: State University of New York, 1970. 101p. ED 049 163. EDRS Price: MF-$0.65; HC-$6.58.

This report briefly describes a summer workshop on individualizing instruction in which 34 teachers, instructional team leaders, and administrators participated. The major part of the report consists of eight papers written by workshop staff.

Burke, Caseel. The Individualized, Competency-Based System of Teacher Education at Weber State College. Washington, D.C.: American Association of Colleges for Teacher Education, March 1972. 39p. Publisher's Price: $2.00. SP 005 754. EDRS Price: MF-$0.65; HC-$3.29.

In the transition from traditional to competency-based teacher education, Weber State College personnel and public school personnel selected topics which were based on worthwhile aspects of earlier courses. The program is designed around modules, which specify behavioral objectives, learning experiences, and proficiency assessment. Student teaching is in a team arrangement with a master teacher, another teacher, and several student teachers.

Clegg, Ambrose A., and Anna Ochoa. Evaluation of a Performance-Based Program in Teacher Education: Recommendations for Implementation. Seattle: University of Washington, College of Education, 1970. 80p. ED 057 017. EDRS Price: MF-$0.65; HC-$3.29.

The major objective of this program was to build a field-based program using predefined behavioral objectives and their accompanying performance criteria with an instructional program integrating theoretical knowledge with practical experience. Administrative arrangements were made to allow the 20 trainee participants to take their professional courses on a pass-fail basis. Seminars were coordinated with concurrent classroom experience at progressively increasing levels of responsibility in three types of school: inner-city, urban, and suburban. Seventeen trainees completed the program successfully and were certified. Of these, 12 had obtained teaching positions as of June 1970. Detailed recommendations for program improvement are given.

Haley, Frances, comp. Colorado Innovates: A Directory of Alternative Teacher Education Programs. Boulder: Social Science Education Consortium, 1971. 22p. ED 055 027. EDRS Price: MF-$-.65; HC-$3.29.

This directory lists innovative teacher education programs at all institutions of higher education in Colorado as well as many public schools. Although there are probably programs in the state not included, those listed suggest the variety of approaches being used. The information provided for each of the 14 programs includes the titles, budget, number served, level served, objectives, description, evaluation, special features, and names of contacts. An additional seven programs are listed with brief information and notations on special features.

Lackawanna (N.Y.) Public Schools, New York State Education Department, and State University of New York. *Undergraduate Urban Teacher Education Program*. State University College at Buffalo. Lackawanna: the Public Schools; Albany: the Department; Buffalo: the University, 1970. 111p. ED 052 134. EDRS Price: MF-$0.65; HC-$6.58.

The aim of this cooperative EPDA program is to improve education in the public schools through utilization of personnel in a differentiated staffing pattern and the training of teachers for service in urban areas through a carefully planned practicum combined with professional courses taught on site, with competency-based criteria interwoven throughout both phases.

Maddox, Kathryn, and others. *New Dimensions in Teacher Education Inservice*. Charleston, W.Va.: Kanawha County Teacher Education Center, 1970. 31p. ED 053 093. EDRS Price: MF-$0.65; HC-$3.29.

The Multi-Institutional Kanawha County Teacher Education Center has developed new techniques in teacher education, initiated cooperative seminars, and explored and developed cooperative in-service programs for student teachers and supervising teachers. This document describes an "on site" program designed to improve the competency of teachers and to improve the quality of teacher education in schools designated as teacher education centers.

Peck, Robert F. *Personalized Education: An Attainable Goal in the Seventies*. Report Series No. 36. Austin: University of Texas, Research and Development Center for Teacher Education, 1970. 18p. ED 051 137. EDRS Price: MF-$0.65; HC-$3.29.

In this paper, the Texas R&D Center's programs on the personalization of teacher education are outlined, including examples of the process at work in experimental projects in the University of Texas College of Education and in the Austin Public Schools. The paper reviews the present state of the art and speculates on the steps necessary to implement personalization on a wide-spread basis in the nation's schools and colleges.

The programs mentioned to this point, for the most part, have not approached personnel preparation specifically from a special education orientation. The following three references do take such an orientation.

Final Report. Summary of Six National Special Study Institutes on Upgrading Doctoral Level Training Programs in Mental Retardation, 1970. By William R. Carriker and Douglas P. Howard, National Coordinators, Department of Special Education, School of Education, University of Virginia, Supported by USOE, Bureau of Education for the Handicapped under PL 85-926 as amended.

On pages 15 through 19 of this document are listed the Common competencies expected of doctoral students at the completion of the programs.

Altman, Reuben, Marilyn R. Chandler, Austin J. Connoly and Edward L. Meyen. Interim Report: Competency Research Phase. Prototype Training Program for the Preparation of Curriculum Consultants for Exceptional Children. U.S. Office of Education. November, 1971.

This contains a report of a method of gathering data on relative competency importance and trainability from persons in the areas where trainees will probably be employed. The purposes for the data gathering are (1) to identify specific competencies perceived by school personnel as important to the effectiveness of a curriculum consultant for exceptional children and (2) to determine the extent of the relationships among competencies which could be capitalized on in the development of instructional modules. The competencies which were considered are listed, one at a time, at the tops of Tables 11 to 110. (pages 64 to 163.) Each competency is represented with the data gathered about it.

This report is no longer available, but there are loan copies available from the project. Write:

Department of Special Education
515 South Sixth Street
Columbia, Missouri 65201

An Experimental Teacher Education Program: Professional Preparation Specifically Oriented to Teachers of Trainable Mentally Retarded Pupils (Rex Program). Prepared and submitted by Dr. Frederick H. Kingdon, Ed.D. Teacher Competency Format written and developed by Dr. Shirl Stark, Ed.D. Prepared under EHA, Title VI-B Project, Number S-006-0000679/003, 1971-1972. Department of Behavioral Sciences in Education, School of Education, California State University, Fullerton, California.

This program divides its long-term goals into two areas: Teaching competency and professional background. There are five goals in the former area and two in the latter. The goals are then broken down into objectives and listed along with general activities, classes, and examples of tasks for and/or evaluation

Since our project focused on the preparation of change agent personnel, we, of course, were particularly interested in training models for such personnel. In this connection, the reader is referred to another monograph prepared in conjunction with our project. This monograph, entitled Facilitating educational change and preparing change agents, (Adelman, 1973) describes our work and the implications we derive from it and contains references to major related works.

The reader who has reviewed the great number of programs cited above and who still wants to find out about other programs is directed to the general table of sources of information and materials in Appendix III. This table describes those resource areas which the reader can explore to locate other programs, curriculum materials for training, and so forth.

Finally, it may be noted that with the current ferment in "teacher education" many innovative approaches to personnel preparation are underway but as yet have not been reported comprehensively. Upon hearing about a program, a letter to the director usually will result in the receipt of helpful material.

II

Representation of the Sequence of Major Tasks Involved in Planning, Implementing, and Evaluating a School System Program

The following figure was prepared in conjunction with Figure 2 (in the main body of the monograph) and is designed to allow the reader to compare the similarities and differences between planning, implementing, and evaluating (a) a personnel preparation program and (b) a school instructional program.

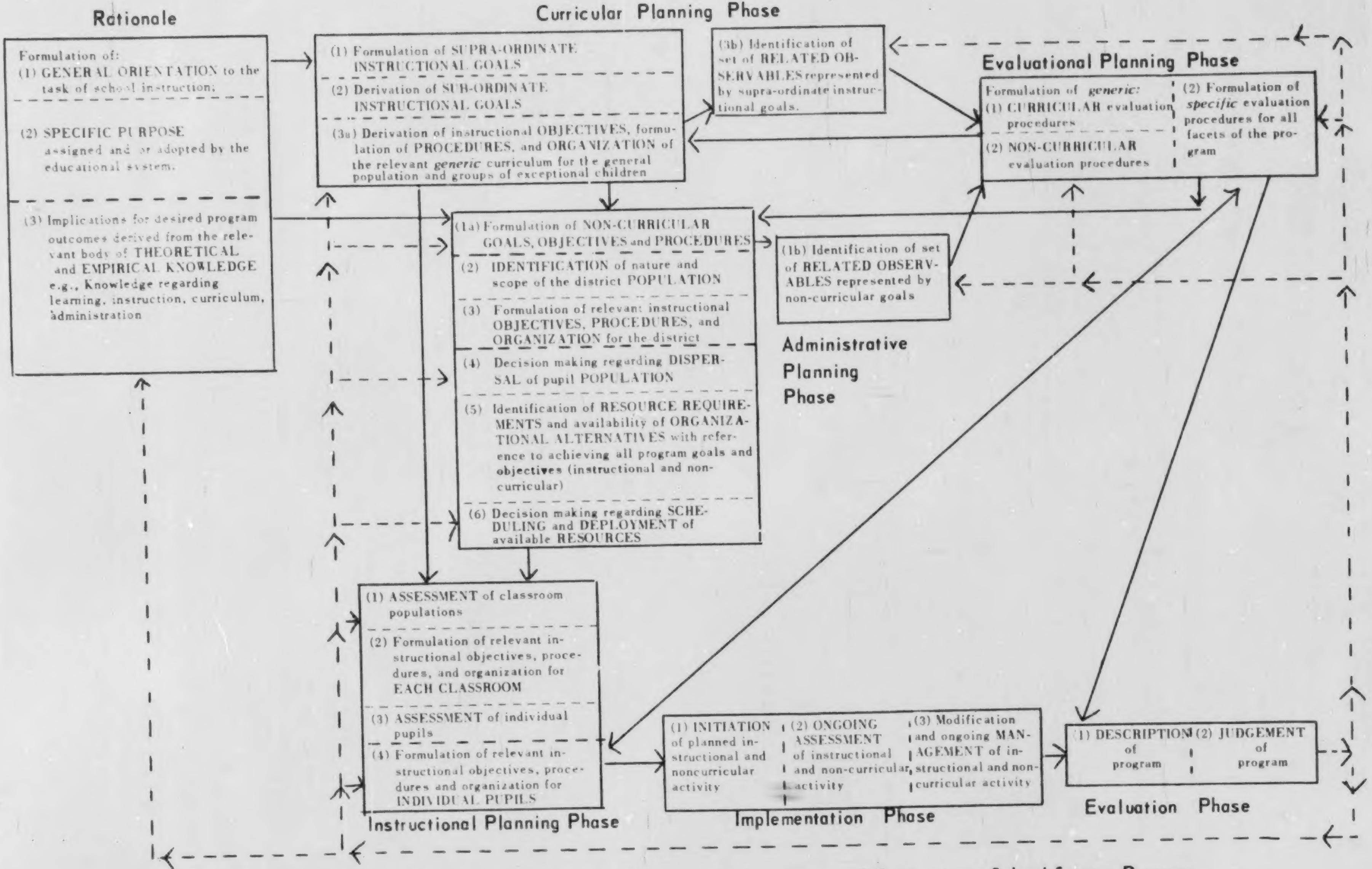
Rationale
Formulation of:
(1) GENERAL ORIENTATION to the task of school instruction;
(2) SPECIFIC PURPOSE assigned and or adopted by the educational system.
(3) Implications for desired program outcomes derived from the relevant body of THEORETICAL and EMPIRICAL KNOWLEDGE e.g., Knowledge regarding learning, instruction, curriculum, administration
Curricular Planning Phase
(1) Formulation of SUPRA-ORDINATE INSTRUCTIONAL GOALS
(2) Derivation of SUB-ORDINATE INSTRUCTIONAL GOALS
(3a) Derivation of instructional OBJECTIVES, formulation of PROCEDURES, and ORGANIZATION of the relevant generic curriculum for the general population and groups of exceptional children
(3b) Identification of set of RELATED OBSERVABLES represented by supra-ordinate instructional goals.
Evaluational Planning Phase
Formulation of generic:
(1) CURRICULAR evaluation procedures
(2) NON-CURRICULAR evaluation procedures
(2) Formulation of specific evaluation procedures for all facets of the program
(1a) Formulation of NON-CURRICULAR GOALS, OBJECTIVES and PROCEDURES
(2) IDENTIFICATION of nature and scope of the district POPULATION
(3) Formulation of relevant instructional OBJECTIVES, PROCEDURES, and ORGANIZATION for the district
(4) Decision making regarding DISPERSAL of pupil POPULATION
(5) Identification of RESOURCE REQUIREMENTS and availability of ORGANIZATIONAL ALTERNATIVES with reference to achieving all program goals and objectives (instructional and non-curricular)
(6) Decision making regarding SCHEDULING and DEPLOYMENT of available RESOURCES
(1b) Identification of set of RELATED OBSERVABLES represented by non-curricular goals
Administrative Planning Phase
(1) ASSESSMENT of classroom populations
(2) Formulation of relevant instructional objectives, procedures, and organization for EACH CLASSROOM
(3) ASSESSMENT of individual pupils
(4) Formulation of relevant instructional objectives, procedures and organization for INDIVIDUAL PUPILS
Instructional Planning Phase
(1) INITIATION of planned instructional and noncurricular activity
(2) ONGOING ASSESSMENT of instructional and non-curricular activity
(3) Modification and ongoing MANAGEMENT of instructional and non-curricular activity
Implementation Phase
(1) DESCRIPTION of program
(2) JUDGEMENT of program
Evaluation Phase

Figure The Sequence of Major Tasks Involved in Planning, Implementing, and Evaluating a School System Program.

III

SOURCES OF INFORMATION AND MATERIALS

Prepared by Molly Carpenter

Anyone faced with the tasks of curricular planning or instructional planning soon meets the question: Where can I find information about the subjects I plan to teach, methods which might be used, and materials with which to teach them? It seems to us that the problem here is not so much a lack of information and materials but that a great deal of available resource material is overlooked. This is an outline of sources of information and materials which we have prepared as an aid for the reader in pursuing such information more quickly, more methodically and more fruitfully. While the emphasis is on planning personnel preparation programs, many of the sources listed are appropriate for planning school system programs.

SOURCES OF INFORMATION AND MATERIALS

LIBRARY

I. General Guides to Information Resources
  A. Books
  B. Information Services
II. Books, Project Reports, and Dissertations
III. Journals
IV. ERIC Materials
V. Instructional Aids References
  A. Audio-visual References
  B. Programmed Materials
  C. Simulation and Role Playing
  D. Textbooks
  E. Special Education Materials
VI. Yearbooks, Handbooks and Guides
  A. Yearbooks
  B. Handbooks and Guides
VII. Other Government Publications

PUBLIC AND PRIVATE ORGANIZATIONS

I. Regional Educational Centers and Laboratories
  A. ERIC Centers
  B. Regional Educational Laboratories
  C. Research and Development Centers
II. Governmental Educational Agencies
III. Educational Associations, Organizations, Institutes, and Consortiums
IV. Commercial Companies

PERSONAL CONTACTS AND INVESTIGATIONS

I. Direct Communication
II. Workshops and Conferences
III. Personally Initiated Theoretical and Empirical Investigations and Analyses

LIBRARY

I. General Guides to Information Resources[1]

A. Books

Here we list only a few such guides, though there are many. In fact, each of the references here contains references to more guides.

Burke, A.J. and Burke, M.A. Documentation in education. (Revision of Alexander, C. and Burke, A.J. How to locate educational information and data) Fourth edition, revised. New York: Teachers College Press, 1967.

This book is divided into three parts: Fundamentals of information and storage and retrieval, Locating educational information or data, and Bibliographic searching in education. It is invaluable for anyone embarking on an extensive information search. Its size (382 pages) may seem formidable, but it is well indexed and easy to use.

Directory of educational information resources. Compiled by Wanger, J. New York: CCM Information Corporation, 1971.

This is a more recent and simpler guide to information resources. Section I of this book refers to the information resources indexed by location. For instance, Los Angeles has listed: The Center for the Study of Evaluation of Instructional Programs, ERIC Clearinghouse/Junior Colleges, and Instructional Materials Center for Special Education.

Section II lists and gives information about National resources. This includes information about:

ERIC (Educational Resources Information Center)
U.S. Office of Education Regional Offices
U.S. Office of Education Sponsored Programs
    Regional Educational Laboratories
    Research and Development Centers
    Special Education Regional Instructional Materials Centers
National Associations
National Information Centers

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[1] In using all guides a central concern is the descriptive words and phrases under which the information is indexed. These are referred to as "descriptors". Different systems and indexes require the use of different descriptors. There are thesauruses of descriptors available and some are referred to in this outline.

Section III offers an annotated bibliography of selected directories and guides which present listings of specialized information centers and of education and education related associations and organizations.

Havelock, R.G. "Major Information Sources in Education" (Appendix B in The change agent's guide to innovation in education). Englewood Cliffs: Educational Technology Publications, 1973.

In this appendix numerous sources are listed and briefly annotated. The author cautions that the list is not exhaustive and that selection has been made of sources relevant to educational innovation which are largest and show the most growth potential. The listings are made under the following categories: periodicals, information services, libraries, directories or indices, reference books, consulting organizations, academic institutions, human resources, government agencies, professional organizations, and other school systems.

Additional guides in specialized areas are available. The ERIC Clearinghouses are good sources of information to keep the reader abreast of such publications. Two listings which have been recently compiled and are available on request from the CEC Information Center on Exceptional Children (an ERIC Clearinghouse) are: A selected guide to public agencies concerned with exceptional children and A selected guide to governmental agencies concerned with exceptional children. They contain descriptions of purposes, objectives, and services, and full addresses for a variety of organizations.

B. Information Services

The computer is coming into use as an aid in searching for information. In a later section of this outline (LIBRARY,IV, ERIC Materials) we mention that ERIC has some computer services for retrieving summaries of material which they have in their files. It should also be noted that mention is made of other information gathering services under some of the organizations in the section of this outline entitled PUBLIC AND PRIVATE ORGANIZATIONS. The growth of such services is inevitable and welcome.

One such service is offered for a fee by National Technical Information Service. We shall include information about it here as an example of these services. NTIS, formerly the Clearinghouse for Federal Scientific and Technical Information, is a central source for the public sale of government-sponsored research reports and other analyses prepared by Federal agencies, their contractors or grantees. The information collection covers all federally-sponsored research projects completed since 1964 brought together from hundreds of federal agencies. They have a service, labelled NTISearch, which will gather this information upon request if it relates in any way to business and technology, for a charge of $50. Searches already completed can by purchased for $20. A listing of prepackaged search titles is available in the NTIS Information Package Catalog. Order NTIS - PR - 73 - 02. SSIE (Smithsonian Science Information Exchange) maintains a file of ongoing research projects which NTISearch users also can have searched at a reduced fee.

For more information:
National Technical Information Service
U.S. Department of Commerce
5281 Port Royal Road
Springfield, Va. 22151

II. Books, Project Reports, and Dissertations

Obviously, there are too many relevant books and reports for us to attempt to indicate or even categorize them here. The reader needs only to look at the numerous references cited throughout this guide and its companion works to achieve a sense of the wealth of resources of this type which are available.

Project reports which have not been published may be available in the ERIC system (see outline section entitled ERIC Materials). If the project reports have been published by the government they may be in a separate section of the library (see outline section entitled Other Government Publications). A few of the reports which we have found helpful and have mentioned may not yet be available in some libraries. In such cases, these may be obtained by writing the author or agency cited for complimentary or loan copies. (In some instances a minimal fee is charged.)

Dissertation Abstracts International. Ann Arbor: University Microfilms, 1952- . Monthly.

This is a compilation of abstracts of doctoral dissertations submitted to University Microfilms by more than 305 cooperating institutions in the United States and Canada. Copies of complete text may be purchased either on microfilm or as xerographic prints. Dissertations often include reviews of the literature which are good bibliographic sources.

III. Journals

A. For those who are interested in following a particular field of education, there are a number of journals which will help keep readers abreast of current developments. A few of the journals which we found to be particularly helpful with reference to the topic of teacher education are listed here.

Academic Therapy
The Educational Forum
Educational Leadership
Educational Technology
Exceptional Child
Journal of Curriculum Studies
Journal of Educational Research
Journal of Learning Disabilities
Journal of Research and Development in Education
The Journal of Teacher Education
The National Elementary Principal
Peabody Journal of Education
Phi Delta Kappan
Professional Psychology
Review of Educational Research
School and Society
Teachers College Record
Teaching Exceptional Children

There is a weekly publication which reporduces the tables of contents for these and many other journals in the behavioral, social and management sciences and in educational theory and practice. It is:

Current Contents: Behavioral, Social and Educational Sciences.
A product of the Institute for Scientific Information,
325 Chestnut Street, Philadelphia, Penn. 19106.

It covers more than 1100 journals, world wide, and has a directory to authors' addresses (to aid in obtaining reprints) as well as a triannual list of publishers' addresses (for getting information about or subscribing to a journal).

There is a service (OATS-ISI's Original Tear Sheet and OATS Hot Line) by which the reader can obtain articles which are not available in his library.

B. If one wishes to find available information regarding a particular topic, then a search for relevant journal articles in the past issues would be in order. There are several reference resources which will help the reader here.

The Education Index--Contains references by author and subject index to a selected list of educational periodicals, books and pamphlets.

Current Index to Journals in Education (CIJE)--An ERIC publication which not only has references to articles, but very short annotations on their content. It provides a detailed index to over 500 education and education related journals.

Longer annotations can be found in some speciality indexes such as Exceptional Child Education Abstracts (ECEA) which is a quarterly journal put out by the CEC Information Center--an ERIC Clearinghouse. It contains abstracts of research reports, journal articles, curriculum guides, teaching activity manuals, administrative surveys and guidelines, texts for professionals, and literature for parents and the beginning student. Each volume has both a cumulative author and a cumulative subject index which refer to abstracts within the year of that volume.

IV. ERIC Materials

The Current Index to Journals in Education is not the only library service which ERIC provides. The ERIC system is a national information system with the purpose of making current educational information available directly to those professionals who need it. It is sponsored by the U.S. Office of Education, Department of Health, Education and Welfare. The central office is in Washington, D.C. (see address below) but there are many specialized centers or clearing houses, each of which is responsible for a particular educational area. At these centers the literature is monitored, acquired, evaluated, abstracted, and indexed. This literature is then announced in the ERIC reference products. If the literature has been published it is indexed in the CIJE (see previous section). If not, it will be indexed in the monthly Research in Education. This journal is meant to provide early dissemination of significant and timely educational research reports and projects of interest to the educational community. Since it deals in unpublished material, ERIC makes the material available either in printed or photographic form. The printed form is referred to as hard copy (HC) and can be purchased from ERIC for a minimal price. The photographic form is called microfiche (MF) and requires a reading machine. While the microfiche can be purchased both the microfiche and the reading machines are available at many libraries, at some clearinghouses, and at other educational information centers. Some library systems will make the microfiche available on inter-library loan. Some schools now offer a computer service which will summon abstracts about articles filed under particular descriptors (UCLA has begun such a service free of charge to professors).

ERIC also publishes the Thesaurus of ERIC Descriptors to help the researcher to be sure he is using the most likely descriptors to find the subject desired. Each term is listed with possible related terms and an indication of which of the terms will provide the most information when you refer to the Research in Education or Current

Index to Journals in Education volumes. A more specialized thesaurus, Thesaurus for Exceptional Child Education is kept up to date with special education terms to make indexing and finding of material more effective. This is meant to be used in conjunction with ECEA.

If the reader wishes to familiarize himself with the ERIC system and its use, the following documents are available through the ERIC Document Reproduction Service:

How to conduct a search through ERIC, ED 036 499, microfiche 65¢; hardcopy $3.29. (Order from LEASCO Information Products, Inc., ERIC Document Reproduction Service, P.O. Box Drawer O, Bethesda, Maryland 20014.)

Instructional Materials on Educational Resources Information Center (ERIC). Part Two. Information Sheets on ERIC, ED 043 580, microfiche 65¢; hardcopy $3.29. This is available, as a complimentary item, while the supply lasts, from the Clearinghouse on Teacher Education. American Association of Colleges for Teacher Education, 1 Dupont Circle, N.W., Suite 616, Washington, D.C. 20005.

The address of the main ERIC office is:

ERIC (Educational Resources Information Center)
U.S. Office of Education
400 Maryland Avenue, S.W.
Washington, D.C. 20202

V. Instructional Aids References

A. Audio-visual References

By far the most comprehensive AV references we found were those produced by NICEM (National Information Center for Educational Media), University of Southern California, University Park, Los Angeles, Ca. 90007. (They are in the business of providing custom catalogs for any group with audio-visual material and maintain a computerized bank of 170,000 main title entries under various types of media.) This center has produced indexes to audio-visual materials which are very comprehensive and are being updated by the publication of supplements. The publisher of the indexes is: R.R. Bowker Company, 1180 Avenue of the Americas, New York, New York 10036. The indexes are:

Index to 16 mm Educational Films	($18.50)
Index to 35 mm Filmstrips	($12.00)
Index to Educational Audio Tapes	($12.50)
Index to 8 mm Cartridges	($8.50)

Index to Producers and Distributors ($12.50)
Index to Ecology--Multimedia ($9.50)
Index to Educational Overhead Transparencies ($8.50)
Index to Black History and Studies--Multimedia ($9.50)

There is also a comprehensive source for governmentally produced audio-visual materials. It is:

National Audio-visual Center
National Archives and Records Service (GSA)
Washington, D.C. 20409

This center can provide information about audio-visual materials produced by or available from governmental agencies. The materials may be available for rental, loan or purchase.

IMC/RMC Network Professional Film Collection, a guide available from the CEC Information Center on Exceptional Children, lists annotations, costs, and availability information on current film holdings at all Special Education IMC/RMC's.

There are a number of audio-visual aids references in the library, many of which are out of date or refer only to children's materials. We had more success by locating companies which dealt in the types of materials in which we were interested and then sending for their catalogs of materials.

One source for company names is: Audiovisual market place: a multimedia guide. New York: R.R. Bowker, Co., 1969.

The companies with which we had most success in finding teacher education materials are listed in this outline under PUBLIC AND PRIVATE ORGANIZATIONS, Part IV (Commercial Companies).

If one is looking for adult materials it is also suggested that he check with university audio-visual departments. They often have material which has been purchased by the school or they may have access to material owned by other schools in their same system or consortium. Local school districts also often have materials for teacher education as do other centers and resource areas mentioned in this guide.

For those who are looking for materials at pre-university levels, there are good lists of resource books in the following texts.

Gerlach, V.S. and Ely, D.P. Teaching and media--a systematic approach. Englewood Cliffs: Prentice-Hall, Inc., 1971

At the end of each section on a different type of educational medium, these authors list sources of information about that medium as well as sources of materials to use with that medium. They are very up-to-date.

Handy, J.B. and Ullmer, E.J. Educational media and the teacher. Dubuque: Wm. C. Brown Company, 1970.

There are sections in this book on Educational media bookshelf, References and guides for media materials and equipment, Periodicals in educational media, and Media materials on media.

B. Programmed Material

There are also references to programmed learning materials. A comprehensive reference in this area which describes more than 3500 programmed texts plus 500 machine based or multi-media programs is:

Hendershot, Carl H. Programmed learning: A bibliography of programs and presentation devices, with semi-annual supplements. Published in Bay City, Michigan, by the author since 1967.

C. Simulation and Role Playing

A very complete reference to simulation games is:

Zuckerman, D.W. and Horn, R.E. The guide to simulations/games for education and training. Information Resources, Inc. P.O. Box 417, Lexington, Massachusetts 02173.

The authors identify simulations as games whose elements "compose a more or less accurate representation or model of some external reality with which the players interact in much the same way they would interact with the actual reality." (p. 1) The guide has complete information on 613 games and simulation games as well as a list of 473 more items which are discontinued, in development, or about which more information was needed. The games included are aimed at wide range of age levels, from elementary school through professionals. There is a section on games intended for preparation for the field of education, both for teachers and administrators.

Also included are some interesting articles: A basic reference shelf on simulation and gaming (Twelker and Layden), getting into simulation games (Horn and Zuckerman), Introducing simulation with simulation: participative decision making (Horn), and How students can make their own simulation games (Horn).

An article which discusses some of these games and the rationale for using games in teacher education is:

Tansey, P.J. Simulation Techniques in the Training of Teachers, in R.H.R. Armstrong and J.L. Taylor, editors. Feedback on instructional simulation systems. Cambridge Institute of Education, 1971.

Professional teacher education II; a programmed design developed by the AACTE teacher education and media project. American Association of Colleges for Teacher Education. Washington, D.C. 20036.

The above report is about a project which was designed to increase the use of innovations which are being developed in the training of teachers. The project included a series of workshops for teacher educators which served to introduce four such innovations to the participants. The innovations covered were: interaction analysis, microteaching, nonverbal communication, and simulation. The presentations, made by leaders in the fields, were on videotape and can be purchased.

A major complaint by participants was the lack of clarity regarding the fact that these four were only examples of innovation and were not meant to be recommended to any greater degree than other examples. To help rectify this misconception, the project also presented motion pictures about three other innovations: "Classroom Simulation", about the Simulation project at Oregon College of Education, "ITEMS", a film produced under the program Innovations in Teacher Education at Stanford, and "What Do I Know About Benny", a film from the series Critical Moments in Teaching produced at the University of Missouri at Kansas City.

This report contains good bibliographies as well as explanations of the innovations mentioned here and of the workshops themselves.

Microteaching, a form of simulation which was begun in 1963, has become a very popular tool in teacher training programs. It allows for controlled experiences with less risk involvement than in the real classroom and often provides for a review and reteaching of a lesson which the teacher is practicing. A good book on the subject is:

Allen, D.W. and Ryan, K. Microteaching. Reading, Mass.: Addison-Wesley Publishing Company, 1969.

New materials in the area of microteaching and simulation are frequently reported in the ERIC files.

D. Books

There are several references to textbooks available. One of these, El-hi textbooks in print 1973, contains references to 17,000 elementary, junior high and senior high and pedagogical books. They are cross indexed in four ways (subject, author, title, and series). The references include textbooks, reference books, maps, pedagogical books, teaching aids and programmed learning materials in book form.

El-hi textbooks in print 1973. New York: R.R. Bowker Company, 1973.

There are similar resources for college textbooks. One is:

Clapp, J. College textbooks. New York: Scarecrow Press, 1960. Supplement 1, 1965.

E. Special Education Materials

There is a network of Special Education Regional Instructional Materials centers which includes regional Special Education Instructional Materials Centers, Regional Media Centers, and a national information clearinghouse. They are intended to provide materials and information related to the education of handicapped children. These centers are listed in the publication entitled A Selected Guide to Government Agencies Concerned with Exceptional Children which has recently been compiled and published by the CEC Information Center on Exceptional Children, 1411 South Jefferson Davis Highway, Suite 900, Arlington, Virgina 22202. Also available from this center is a guide to all film holdings available at the Special Education IMC/RMC's. It is entitled IMC/RMC Network Professional Film Collection.

For special information requests, bibliographies, or services and products of the CEC Information Center write to Information Services, CEC Information Center on Exceptional Children (address above).

VI. Yearbooks, Handbooks and Guides

A. Yearbooks

Some organizations produce yearbooks on various educational topics. Two notable examples are:

NSSE (National Society for the Study of Education) produces a yearbook composed of articles by prominent educators devoted to a special topic. Often more than one topic is covered in a particular year, but each topic is published in a separately bound book and given a different part designation. This has gone on for a number of years so there are many such volumes. Examples are: Theories of learning and instruction (1965, part I); Programmed instruction (1967, part II); The curriculum: retrospect and prospect (1971, part I); Early childhood education (1972, part II).

ASCD (Association for Supervision and Curriculum Development) has yearbooks similar to those of NSSE, though not as extensive. Chapters are written by different authors about various aspects of a common subject and are gathered into a book and published by the association. Some representative titles have been: Life skills in school and society (1969); A new look at progressive education (1972); Education for peace (1973).

B. Handbooks and Guides

We are classifying as handbooks and guides those publications which are intended to help their reader to do something. In other words, this category of publications implies usefulness for practice.

There are a number of such publications, most of which would be found under the subject index in the card catalogue or in the government publications catalogue. Some which have captured our intention and which can serve as an example of what we mean by this category are below:

Houston, W.R., Hollis, L.Y., Jones, H.L., Edwards, D.A., Pace, A., White, S. Developing instructional modules. Houston: Dr. W.R. Houston, 444 Education Bldg., University of Houston, Houston, Texas 77004, 1972.

This reference is actually a module for developing modules. It has been used in curriculum development workshops.

Arends, R.L., Masla, J.A., Weber, W.A. Handbook for the development of instructional modules in competency-based teacher education programs. Second edition, 1973.

It is the intention of these authors to help those involved in developing instructional modules in teacher education to share their work with each other by establishing a common format for those modules.

Joyce, B., Morine, G., Weil, M., and Wald, R. Materials for modules. A classification of competency-oriented tools for teacher education. New York, June 1971. (Project No. 420271, Grant No. OEG-0-71-0271 [715].)

This is an effort to identify the performance-based materials which were available for dissemination into operating programs at the time the search was carried on.

Travers, R.M.W., editor. Handbook of research on teaching. A project of the American Educational Research Association. Chicago: Rand McNally and Company, 1973.

This is the second edition of this handbook. (The first was edited by N.L. Gage.) Included in this volume are forty-two articles which range in focus from research in specific areas of teaching, to general research techniques for the study of teaching.

VII. Other Government Publications

Depository libraries receive a large number of government publications on a regular basis. Though they are allowed to select what they receive, most depository libraries choose to receive a good deal of information about education. To find out which libraries have been designated depository libraries, look in the September issue of "Monthly Catalog of United States Government Publications". Each year the libraries are listed there.

Government publications may be catalogued and housed in a separate section of the library, and are not necessarily cross-referenced in the main card catalogue. The government publishes a monthly reference to all government publications. They are listed by sponsoring agency such as U.S. Office of Education or U.S. Army Behavior and Systems Research Laboratory, as well as by subject. There is a Dicennial Cumulative Index which gives all references to a subject area in the ten years it covers.

As an example of such governmental publications in education which are important for personnel preparation, there are the elementary models to which we have made reference.

PUBLIC AND PRIVATE ORGANIZATIONS

I. Regional Educational Centers and Laboratories

A. ERIC Centers

As stated earlier, ERIC is a national information system about education which provides some invaluable library services in terms of printing and making available otherwise unpublished information, especially in the field of research. The twenty ERIC clearinghouses provide other services for those interested in following a particular area of education. Each clearinghouse specializes in a different area of education and each generates newsletters, bulletins, bibliographies, research reviews, state-of-the-art papers, and interpretive studies on educational subjects to satsify the needs of the community it serves. A list of the clearinghouses is presented below. To keep abreast with a particular area, request the regularly published newsletter.

ADULT EDUCATION
Syracuse University
107 Roney Lane
Syracuse, New York 13210

COUNSELING AND PERSONNEL SERVICES
University of Michigan
School of Education Building
Room 2108
East University and South University Sts.
Ann Arbor, Michigan 48104

DISADVANTAGED
Teachers College, Columbia University
Box 40
1258 Amsterdam Avenue
New York, New York 10027

EARLY CHILDHOOD EDUCATION
University of Illinois
805 West Pennsylvania Avenue
Urbana, Illinois 61801

EDUCATIONAL MANAGEMENT
University of Oregon
Eugene, Oregon 97403

EDUCATIONAL MEDIA AND TECHNOLOGY
Stanford University
School of Education
Stanford, California 94302

EXCEPTIONAL CHILDREN
The Council for Exceptional Children
Jefferson Plaza, No. 1, Suite 900
1411 South Jefferson Davis Highway
Arlington, Virginia 22202

HIGHER EDUCATION
George Washington University
1 Dupont Circle, N.W., Suite 630
Washington, D.C. 20036

JUNIOR COLLEGES
University of California at Los Angeles
Powell Library, Room 96
405 Hilgard Avenue
Los Angeles, California 90024

LANGUAGES AND LINGUISTICS
Modern Language Association of America
62 Fifth Avenue
New York, New York 10011

LIBRARY AND INFORMATION SCIENCE
American Society for Information Science
1140 Connecticut Avenue
Suite 804
Washington, D.C. 20036

READING AND COMMUNICATION SKILLS
National Council of Teachers of English
1111 Kenyon Road
Urbana, Illinois 61801

RURAL EDUCATION AND SMALL SCHOOLS
New Mexico State University
Box 3-AP
Las Cruces, New Mexico 88003

SCIENCE AND MATHEMATICS EDUCATION
Ohio State University
1460 West Lane Avenue
Columbus, Ohio 43221

SOCIAL STUDIES/SOCIAL SCIENCE EDUCATION
University of Colorado
855 Broadway
Boulder, Colorado 80302

TEACHER EDUCATION
American Association of Colleges for Teacher Education
1 Dupont Circle, N.W.
Suite 616
Washington, D.C. 20036

TESTS, MEASUREMENT AND EVALUATION
Educational Testing Service
Princeton, New Jersey 08549

VOCATIONAL AND TECHNICAL EDUCATION
Ohio State University
1900 Kenny Road
Columbus, Ohio 43210

B. Regional Educational Laboratories

The regional educational laboratories are private non-profit corporations funded at least partially by the federal government. Their role is to take the products of theory and research and move them into practice. Though they work primarily with the public schools which are serving as demonstration schools for their projects, they will often supply information about their programs upon request. They are located in different areas of the country in order to vary the areas in which their services will be supplied.

Though we will try to include a list of the functioning laboratories here there are constant changes. Due to a decrease in funding many of the original laboratories are no longer in existence. Many of those listed here have only one year funding now. To ascertain what labs are still in existence at a given date we would suggest consulting the National Institute of Education, Department of Health, Education and Welfare, Washington, D.C.

Descriptions of the laboratories' research areas which are given below are taken from two sources:

Educator's world: the standard guide to American-Canadian educational associations, publications, conventions, foundations, research centers. Philadelphia: North-American Publishing Company, 1972.

Research Centers Directory. Archie M. Palmer, editor. Detroit: Gale Research Company, 1972.

(This is a guide to university-related and other non-profit research organizations established on a permanent basis and carrying on continuing research programs in a variety of fields including education.)

The following is a list of the laboratories and a description of their research areas:

APPALACHIA EDUCATIONAL LABORATORY (AEL)
1031 Quarrier Street
Charleston, West Virginia 25325

Development of educational cooperative and programs of early childhood education, vocational guidance, language skills and course adaptation. Develops and diffuses and institutionalizes a network of educational cooperatives involving cooperation of local school systems, state departments of education, colleges and universities and employing extensive use of modern technology, communications media and mobil facilities, in order to make quality education accessible to the young people of Appalachia in sections of West Virginia, Kentucky, Ohio, Pennsylvania, Tennessee, and Virginia.

CENTER FOR URBAN EDUCATION (CUE)
105 Madison Avenue
New York, New York 10016

Urban education and community problems in areas where resulting knowledge will help to shape educational policy, including studies on problems related to school administration, teacher training and curriculum, child learning and development, rights of children and youth, urban university-community relations, special problems and practices in education of handicapped childre, relation between urban society and education, preparation and testing of teaching materials, innovative educational programs and the black suburbanite, also feasibility and school legitimacy studies, with emphasis on development and evaluation.

CENTRAL MIDWESTERN REGIONAL EDUCATION LABORATORY (CEMREL)
10646 S. Charles Rock Road
St. Ann, Missouri 63074

Improvement of curricula and instruction in public and private elementary and secondary schools, including comprehensive school mathematics, aesthetic education, instructional systems and early childhood education programs.

FAR WEST LABORATORY FOR EDUCATIONAL RESEARCH AND DEVELOPMENT (FWLERD)
1 Garden Circle
Hotel Claremont
Berkeley, California 94705

Improvement of classroom learning, including studies of teacher education, information systems, school management, early childhood education and multi-ethnic education, also development of exportable inservice minicourses to train teachers in basic classroom skills through microteaching and videotape feedback, self-contained information units that analyse curricular and instructional alternatives, inbasket techniques for problem analysis, setting goals and evaluation, training material for teachers and paraprofessionals in a responsive environment model and parent/child toy-lending libraries.

MIDCONTINENT REGIONAL EDUCATIONAL LABORATORY (MCREL)
104 E. Independence Ave.
Kansas City, Missouri 64106

Development of inquiry skills, including definition of inquiry in realistic behavioral terms and development of teacher behavior to modify pupil behaviors toward learning, also studies on inquiry method of learning, improvement of teacher training through innovations, differentiating instruction to individualize learning and implications of teacher training in an inner-city setting.

NORTHWEST REGIONAL EDUCATIONAL LABORATORY (NWREL)
500 Lindsay Building
710 S.W. Second Avenue
Portland, Oregon 97204

Utilization of scientific knowledge and technology to develop educational products and assistance to institutions, organizations and agencies to utilize these products effectively to improve educational practice, concentrating on improvement of teacher competencies, improvement of education for children from different cultural backgrounds, particularly in reading and language development, improvement of rural schools, relevant educational applications of computer technology and improvement of vocational technical education.

RESEARCH FOR BETTER SCHOOLS, INC. (RBS)
1700 Market Street, Suite 1700
Philadelphia, Pannsylvania 19103

Individualization of instruction consisting of K-6 elementary curriculum in mathematics, reading and science, with initial field testing in other curricular areas.

SOUTHWEST EDUCATIONAL DEVELOPMENT LABORATORY (SEDL)
800 Brazos Street
Austin, Texas 78701

Educational solutions to problems and needs caused by interaction of black, Mexican American, French Acadian and Anglo cultures with an emphasis on building two comprehensive learning systems for children aged 3-8, an early childhood learning system, and an early elementary learning system, including instructional materials, staff development materials and parent education materials in each system with components of mathematics, social education and language development and reading.

SOUTHWESTERN COOPERATIVE EDUCATIONAL LABORATORY (SWCEL)
1404 San Mateo Blvd. S.E.
Albuquerque, New Mexico 87108

Communication arts for the 3-9 year old culturally divergent child; adult basic education; Indian studies.

SOUTHWEST REGIONAL LABORATORY FOR EDUCATIONAL RESEARCH AND DEVELOPMENT (SWRL)
4665 Lampson Ave.
Los Alamitos, California 90720

Curriculum systems, human resources support systems, computer support systems, research to support curriculum systems.

C. Research and Development Centers

These centers have been established at different universities, not as service agencies, but with their emphasis on research and development in different areas of focus. They will provide research program information and do produce occasional papers, reports, newsletters, etc.

CENTER FOR THE ADVANCED STUDY OF EDUCATIONAL ADMINISTRATION
University of Oregon
Eugene, Oregon 97403

CENTER FOR RESEARCH AND DEVELOPMENT IN HIGHER EDUCATION
University of California
4606 Tolman Hall
Berkeley, California 94720

CENTER FOR RESEARCH, DEVELOPMENT AND TRAINING IN
OCCUPATIONAL EDUCATION
North Carolina State University
Raleigh, North Carolina 27607

CENTER FOR SOCIAL ORGANIZATION OF SCHOOLS
The Johns Hopkins University
3505 North Charles Street
Baltimore, Maryland 21218

CENTER FOR THE STUDY OF EVALUATION
Graduate School of Education
University of California
145 Moore Hall
Los Angeles, California 90024

CENTER FOR VOCATIONAL AND TECHNICAL EDUCATION
The Ohio State University
1900 Kenny Road
Columbus, Ohio 43210

LEARNING RESEARCH AND DEVELOPMENT CENTER
208 Mineral Industries Building
University of Pittsburgh
Pittsburgh, Pennsylvania 15213

RESEARCH AND DEVELOPMENT CENTER FOR TEACHER EDUCATION
Education Annex
The University of Texas at Austin
Austin, Texas 78712

STANFORD CENTER FOR RESEARCH AND DEVELOPMENT IN TEACHING
Stanford University
770 Welch Road
Palo Alto, California 94304

WISCONSIN RESEARCH AND DEVELOPMENT CENTER FOR COGNITIVE LEARNING
The University of Wisconsin
1404 Regent Street
Madison, Wisconsin 53706

II. Governmental Educational Agencies

At all levels, agencies concerned with general and special education exist and can be helpful, e.g., NIE, USOE, state departments of education, and local education agencies.

III. Educational Associations, Organizations, Institutes, and Consortiums

Many educational associations, organizations, etc., produce and offer information, materials, and services which could aid in personnel preparation. Examples of such groups are:

EDUCOM (Educational Communications). This is a consortium organized to further the utilization of the emrging communications sciences in education. The interests of EDUCOM include library automation, information networks, and programmed instruction. Membership is open to all accredited colleges and universities in the United States and Canada. EDUCOM issues bulletins ten times a year describing various research efforts and ongoing computer assisted instructional programs. The bulletin address is:

Bulletin of the Interuniversity Communications Council (EDUCOM)
P.O. Box 364
Rosedale Road
Princeton, New Jersey 08560
Editor: Dave Loye

AACTE (American Association of Colleges for Teacher Education) is an organization made up of colleges and universities involved in teacher education. The member institutions prepare more than 90 per cent of the teaching force that enters American schools each year. Its headquarters are in the National Center for Higher Education in Washington, D.C. Its activities include conferences, study committees, commissions, task forces, publications, and projects. Many activities are carried on collaboratively such as the publication of Performance-Based Teacher Education: An Annotated Bibliography, published in conjunction with ERIC Clearinghouse on Teacher Education in 1972.

NEA[2] (National Education Association). This is an independent, voluntary, nongovernmental organization available to all professional teachers. Members include classroom teachers, school administrators, college professors and administrators, and specialists in schools, colleges, and educational agencies, both public and private. Members receive two publications: the NEA Reporter, carrying news of professional and Association developments in a newspaper format, and Today's Education, the professional magazine for members.

NEA is related to many active departments, national affiliates and associated organizations which cover special interest areas. Some were originally separate national organizations and their closeness of relationship with NEA varies considerably.

Information about such groups (examples: Association of Teacher Educators, Association for Educational Communications and Technology, etc.), their charters, dues, official organs, purposes, etc. can be found in the NEA Handbook for Local, State and National Associations which is published annually by NEA Publications. It is available in libraries or could be obtained by writing:

National Education Association
1201 Sixteenth Street, N.W.
Washington, D.C. 20038

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[2] In an appendix in Training for Change Agents, Dr. Sidney Dorros of the NEA suggests that the major categories of professional organizations can be divided into three general groups: 1. General purpose teacher organizations, 2. Administrative and other educational organizations, and 3. Subject area teacher organizations. Most groups in categories 2 and 3 are affiliated, at least loosely, with the NEA. The other major general purpose teacher organization which he mentions is AFT--American Federation of Teachers. It is much smaller than NEA and at this time is more teacher welfare oriented and less concerned with the dissemination of information about innovation. (The reference for the above information is: Havelock, Ronald G. and Mary C. Havelock. Training for change agents.--A guide to the design of training programs in education and other fields. Institute for Social Research, The University of Michigan, Ann Arbor, 1973.)

ASCD (Association for Supervision and Curriculum Development). This is one of the affiliates to NEA (see above). Members receive the magazine Educational Leadership, the yearbook (see LIBRARY, VI--Yearbooks, Handbooks and Guides) and a newsletter. There is an annual conference for members and information about the many books and booklets printed by ASCD as well as tape casettes. For further information write:

Association for Supervision and Curriculum Development
Room 428, 1201 Sixteenth Street, N.W.
Washington, D.C. 20036

CEC (Council for Exceptional Children). This professional organization, also an affiliate of NEA, is devoted to the improvement of the education of all exceptional children--handicapped and gifted. Its members (administrators, teachers, therapists, clinicians, students and others) receive such services as publications, special conferences, conventions, personnel recruitment and employment services, legislative and other activities. For further information write:

The Council for Exceptional Children
Suite 900, Jefferson Plaza, Building 1
1411 South Jefferson Davis Highway
Arlington, Virginia 22202

AERA (American Educational Research Association). Another special interest group, this association provides many services for the educational researcher: a monthly magazine entitled Educational Researcher, annual meetings, training sessions, training materials, monographs, etc. For further information write:

AERA
1126 Sixteenth Street, N.W.
Washington, D.C.

Leadership Training Institute in Learning Disabilities
University of Arizona (Department of Special Education)

This institute is funded by the federal government (under Title VI-G). The full mandate of the original legislation authorizes "1) research and related activites, surveys, and demonstrations...; 2) professional or advanced training for educational personnel...; and 3) establishing and operating model centers..."
The Institute provides technical service to the Child Service Demonstration Projects across the country and has a training and research component. A two volume report has been produced. Of

relevance to personnel preparation is the chapter in Volume I on Personnel Training Practices in Learning Disabilities and related appendices in Volume II.

I/D/E/A (The Institute for Development of Educational Activities, Inc.)

This is an affiliate of the Charles F. Kettering Foundation, Dayton, Ohio. It is a nonprofit corporation engaged in educational improvement. Through programs of research, development, and service, the Institute is committed to advancing the latest in educational knowledge into practice. Their emphasis is on instructional practices which will make education better for individuals. More information may be obtained by writing:

I/D/E/A
5335 Far Hills Avenue
Dayton, Ohio 45429

There are also divisions of I/D/E/A in Los Angeles, and in Melbourne, Florida.

ICED (International Center for Educational Development)

This group which receives support from the Bock Foundation presents workshops and publishes books in an effort to popularize the practice of the open classroom. They also have summer study tours of the British schools. Their address is:

ICED
16161 Ventura Blvd.
Encino, California 91316

IOX (Instructional Objectives Exchange)

Items may be contributed as well as withdrawn from this "bank" of instructional objectives and evaluation devices. W. James Popham is the director and instigator of this project. For further information write:

IOX

Box 24095
Los Angeles, California 90024

Instructional Module Banks

The recent flurry of activity in the field of performance based teacher education has resulted in the production of learning modules by people in diverse locations (see section in this guide labeled Part IV, Section B-1, "Instructional Modules"). Now banks for storage and retrieval and exchange of these modules are being developed in several places. Two of these are Florida State University (Norman Dodl) and University of Houston (Instructional Module Development and Dissemination Project).

Note: For information leading to further groups like these we refer the reader to the three references listed in an earlier section of the outline (LIBRARY, I. General Guides to Information Resources).

IV. Commercial Companies

In this section we have included only a sample of those companies dealing in teacher education materials. For other companies one would pursue other sources mentioned in this outline (see section entitled Instructional Aids References) and, of course, the various commercial publishing companies as well as the professional organizations mentioned in the preceding section. The information which we have here is simply that gleaned from previews and pamphlets which we received while we were working during the past year. They will be listed alphabetically to avoid any implication of preference.

Bel-Mort Films

P.O. Box 19175
Multonomah Station
Portland, Oregon 97219

We reviewed a series of film strips from this company which were very simple but attractive. They were pre-service oriented and would be and interest-arousing type of aid (rather than an information-dispensing one).

General Learning Corporation

3 East 54th Street
New York, New York 10022

This company produces slides/tapes useful as enablers in modules.

Indana University Audio-Visual Center

Bloomington, Indiana 47401

There is a large selection of films produced by the National Educational Television or Public Television Library. Many have to do with education.

Instructional Dynamics Incorporated

116 E. Superior St.
Chicago, Illinois 60611

A catalogue from this company states that they produce Professional Development Modules for Educators, among other things. The materials appear to consist primarily of cassette tapes. The Human Development Institute, a division of Instructional Dynamics, Incorporated, provides materials for a variety of interpersonal training programs.

International Film Bureau, Inc.

332 S. Michigan Ave.
Chicago, Illinois 60604

This company has a variety of teacher education films, including a selection of films on exceptional children.

Listener Corporation

6777 Hollywood Boulevard
Hollywood, California 90028

This company has been developing a library of cassette albums to answer questions and to provide elementary teachers with the principles, strategies and techniques of involving their students in learning. Each album covers a single, self-contained topic to allow a teacher to handle her own in-service education in that area.

Ohio State University

Department of Photography and Cinema, Haskett Hall
156 West 19th Avenue
Columbus, Ohio 43210

This looks like a very promising resource for teacher education films.

We received information about two series of films: A Series of Motion Picture Documents on Communication Theory and the New Education Media, and a series called "Access to Learning". (Many films have won awards.)

Special Purpose Films

26740 Latigo Shore Drive
Malibu, California 90265

Many films produced by this company are appropriate for in-service or pre-service teacher education. There are filmed lectures by Dr. Madeline Hunter on "Translating Theory into Classroom Practice", a series on parent-teacher conferences, a series on "How to Provide Personalized Education in a Public School", etc. None are avialable for preview, however, so we can't vouch for the quality of the films.

VIMCET

P. O. Box 24714
Los Angeles, California 90024

This company produces filmstrip-tape programs prepared by W. James Popham and Eva Baker, Graduate School of Education, University of California, Los Angeles. They cover a number of topics, all related to planning, executing, or evaluating instruction and are behaviorally oriented. They are for pre-service or in-service teacher education and related forms of instructor training. Initials stand for Validated Instructional Materials for the Continuing Education of Teachers.

PERSONAL CONTACT AND INVESTIGATION

I. Direct Communication (written or oral, with experts, supervisors, co-workers, consumers)

We don't want to belabor this point. Obviously, the people to whom one has personal access provide a rich and too often untapped resource. For instance, appropriately planned and implemented meetings of a training program staff for purposes of sharing and problem solving are of indispensible value.

II. Workshops and Conferences

Persons engaged in personnel preparation should be aware of the numerous conferences and workshops that are offered which relate to their areas of concern. Some are sponsored by particular organizations; others are the result of the cooperation of a number of organizations. To determine when and where these are being held, consult the journals in the relevant fields. Most official publications for organizations carry calendars of conferences and workshops in their area of interest. Many of the journals listed in this outline are official organization publications. To find official organs of NEA affiliated groups, look in the NEA handbook referred to in this outline.

Such workshops and conferences not only are a source for hearing about ideas and interacting with others interested in the same topics, but often produce written or taped materials which can be helpful.

III. Personally Initiated Theoretical and Empirical Investigations and Analyses

Again, we don't want to belabor this point. Obvious avenues to expanding one's knowledge in an area of interest are through personal involvement in basic, applied, and evaluative research or through more circumscribed activity such as performing task and product analyses.

IV

Recruiting and Maintaining Education Professionals[1]

The question for discussion here is: How can the field of education attract and retain an increasing number of high caliber instructors and students?

Over the years a wide variety of problems with regard to luring and keeping high quality professionals in the field of education have been identified and discussed. These include the negative status of personnel preparation programs and education as a career; irrelevant barriers which have been established for admission to pre-service programs and to the education professions; the lack of planned and implemented in-service programs; the lack of differentiated staffing patterns; and the inadequacy of current salary policies. These problems will be touched upon briefly here within the context of two overlapping topics: (1) the public image of the educational system in this country; and (2) the working conditions experienced by those professionals who work in the public schools. The term "educational professions" is used to encompass the various roles in the field, including teachers, counselors, administrators, and professors of education.

Education's Image

There is no question but that the educational system in this country could use a good public relations man. Too many people have little good to say about the schools or about people who seek careers in the education professions. The reasons for this situation are many--some justified, some not. Whatever the reasons, this negative image has not aided in efforts to recruit and maintain high quality personnel.

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[1] This discussion is adapted from several previously prepared manuscripts by the author.

The following extracts from Koerner's The Miseducation of American Teachers (1963), are offered as pertinent examples of the type of negative appraisals which have been made and which both reflect and influence public opinion.

> Professional education suffers very greatly from a lack of congruence between actual performance of its graduates and the training programs through which they are put. There is what can only be called an appalling lack of evidence to support the wisdom of this or that kind of professional training for teaching. [p. 16]
>
> Course work in education deserves its ill-repute. It is most often puerile, repetitious, dull and ambiguous--incontestably. [p. 18]
>
> . . . the inferior intellectual quality of the education faculty is the fundamental limitation of the field, and will remain so . . . for some time to come . . . there is still a strong strain of anti-intellectualism that runs through the typical education staff, despite their increasingly frequent apostrophes to academic quality. Until the question of the preparation and the intellectual qualifications of faculty members is faced head-on in education, the prospects for basic reform are not bright. [p. 17]
>
> Likewise, the academic caliber of students in education remains a problem, as it always has. [p. 18]

In similar fashion, teachers and public school programs have been criticized for their shortcomings and failures (Holt, 1964; Kozol, 1967). In all, the image projected by the field of education is an unfortunate one and needs to be changed if high caliber people are to be attracted to this field and to remain in it. However, it would be unrealistic to think that this negative image will be changed on a large scale in the near future, especially since the relatively small number of highly qualified individuals in the field is a major factor perpetuating the negative reputation. Obviously, a vicious cycle exists, and there seems to be little effort to alter the situation.

In this appendix, a number of ideas are presented which could help in recruiting and maintaining high quality personnel, and thereby produce qualitative improvements throughout the system which, in turn, should help to break the vicious cycle that continuates the negative image. An example of a relatively simple procedure which may have a positive impact, both on the quality of public school instruction and on the quality and quantity of recruits, is the currently expanding use of older students as classroom aides and as tutors for younger students. If such experiences prove to be effective and rewarding to all concerned, participating students may well be attracted to the idea of teaching despite the poor reputation of the field; in addition, teachers may find their pupils learning more and their own jobs easier. It is to be hoped that evaluation of the impact of such activities will be forthcoming, for, if this is a beneficial procedure, greater efforts can be expended to provide opportunities for early exposure to and involvement in teaching.

Working Conditions

Few fields are free of personnel complaints regarding working conditions. Consequently, it is difficult to assess how critical the complaints in any one field are with reference to attracting and maintaining high quality personnel. In education, what does seem clear is that while most school district personnel have professional roles and functions, they generally have not been educated and treated as professionals. This lack of professional recognition appears critical with reference to recruitment and retention of high level people.

For example, it is difficult to imagine that many people who can qualify for any of a variety of high level careers would choose a field where there is little opportunity for (1) comprehensive (and necessary) in-service education, (2) interaction with exciting and dynamic colleagues, (3) visible status among colleagues and in the community, (4) participation in establishing policies related to the criteria for admission of new colleagues and in decision-making regarding one's own roles, functions, and working conditions, (5) advancement in stature and salary based on excellence of performance and contribution, (6) experiencing feelings of accomplishment and self-worth with reference to one's everyday on-the-job functioning. Indeed, it would be surprising for *any* "bright, well-balanced, well-educated" person to choose a career in which these qualities were missing. Yet these unsatisfactory conditions appear simultaneously to be the cause and the effect of teachers and other educators not being treated as professionals.

Among the factors related to working conditions which seem particularly important in recruiting and retaining high level personnel are the nature of in-service programs and on-the-job support, including differentiated staffing patterns, and salary policies. These and other relevant topics have been explored in some depth in a variety of resources. Note especially The Teacher Dropout, edited by Stinnett (1970), which is the report of a symposium sponsored by the Phi Delta Kappa Commission on Strengthening the Teaching Profession in cooperation with the NEA National Commission on Teacher Education and Professional Standards. What follows is a brief discussion of these topics designed to highlight major problems and current proposals for their resolution.

In-service. The inadequate nature of current in-service programs has already been touched upon. In view of the fact that no pre-service program claims to produce, on the average, more than minimally competent education professionals, enrollment in a comprehensive in-service program is a necessity for the beginner. For example, any beginning teacher is confronted with a variety of classroom- and extra-classroom-related problems, many of which are initially beyond his/her competency to handle; it follows that on-the-job education and training are needed. Unfortunately, for the most part such support just does not exist because neither the supervisory staff nor more experienced colleagues are readily accessible, and formal in-service programs generally are inadequate.

Besides not providing on-the-job support, most schools assign beginners at least as much responsibility as is assigned experienced staff and in some cases even more. For example, it is not uncommon for a new teacher to have one of the least desirable and most difficult classroom assignments and a variety of extra-classroom duties, such as hall, playground, or luncheon supervision.

Efforts to alter these conditions include: (1) assigning beginners to less demanding (and less critical) situations, thereby reducing the amount of immediate in-service education and support required for them, (2) reducing the extra-ordinary demands on beginners, (3) initiating systematic (integrated and coordinated) in-service programs for all personnel which are keyed to level of experience and current needs, and (4) changing current staffing patterns to allow the utilization of staff whose experiences and/or special competencies make them invaluable in-service educators. The first three points are either self-evident or have been discussed in earlier sections; the idea of differentiated staffing patterns deserves further discussion.

Differentiated Staffing. One of the last areas in the education professions to initiate differentiated staffing patterns has been teaching. In most schools, teachers are called upon to do everything from being a monitor or clerk to a master instructor. However, the value of differentiated roles is increasingly being recognized, and new positions are appearing as reflected by the existence of teacher aides and technologists, of assistant, associate, and master teachers, and a wide variety of specialists. Eventually, in addition to making horizontal and vertical role and function distinctions, including those between professional and non- and/or paraprofessional, it may become feasible to recognize and reward qualitative differentiations among the staff.

With reference to improving working conditions, differentiated staffing has allowed for more efficient, effective, and satisfying use of auxiliary personnel for those tasks which do not require the competency of a certified teacher and of those particular teachers whose experience and/or special competencies make them effective team-teachers and invaluable resources in providing in-service education and on-the-job support for other personnel. For example, volunteer and paid aides have been used in many schools to cope with a wide variety of clerical and monitoring duties, and there are a number of innovative programs which explore more systematic uses of experienced and specialized teaching personnel in in-service programs. One such program, in which this writer was involved, used the classrooms of three teachers in a given school as the focal point of in-service education for that school. Rather than presenting new ideas and procedures through a lecture and workshop format, in-depth in-service efforts were directed at these three teachers. Their classrooms became concrete demonstrations of desirable procedures which were always available to be shared with the rest of the school's personnel. These three teachers played a new role and performed an important function in these schools. They contributed not only to their own students' growth but to that of their colleagues, and through them potentially to the growth of all the children in the school. It should be noted that the principals of schools where such demonstration classrooms have been developed found it both feasible and productive to have staff members take responsibility for each other's classes for sufficient periods of time to allow any teacher to go to the demonstration rooms and learn new procedures. However, if aides or assistants were available, such released time for in-service education would be even more practicable (Adelman and Feshbach, 1971).

Besides improving the current working situation, differential staffing patterns also may result in (a) a wider and better pool of potential personnel; and (2) a better deployment of resources. As Smith et al. (1969) point out: "There is no shortage of raw manpower but a shortage of trained personnel" (p. 247). Thus, it may be that as auxiliary personnel are encouraged to assume responsibility for some tasks now performed by teachers, there should be not only an increased level of job satisfaction for all personnel, but also a need for fewer teachers per school.

Differentiated Salary Policies. Probably, the most critical and powerful factor influencing the recruitment and retention of high quality personnel to a field are the financial incentives, in general, and salaries, in particular. The subject of financial incentives is a complex one, ranging from concern regarding opportunity for advancement to the value of various fringe benefits. The focus here is restricted to salaries since this topic provides a sufficient example of the current conditions and needed changes.

In education, the concern is not so much over starting salaries since they are often competitive; "the real trouble is at the top, where salaries are not competitive . . . and where capable people find their greatest deterrence from entering or remaining" in the field (Koerner, 1963, p. 15). As a result, what is becoming increasingly recommended is the removal of present salary ceilings and the establishment of some sort of incentive principle, such as a policy of increases based on criteria which reflect not only role and function, but quality of performance and contribution. The problem is, of course, in specifying these criteria--which returns the discussion to the issues and problems related to specifying levels of minimal competence and professional standards and the evaluation of educational programs.

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V

Some Specific Implications for the Preparation of Teachers[1]

The conceptualization of learning, teaching, and assessment which has been presented in this monograph (and elsewhere) convinces me that broad- and narrow-band practices should, for the most part, be taught separately during the pre-service preparation of regular classroom teachers. Such pre-service preparation should primarily focus on the learning of broad-band practices. And related to this point, the early emphasis in preparation should be on learning to teach basic school subjects and prerequisites to school learning. Only after a reasonable level of competence in these areas is attained (e.g., the minimal level of competence needed for establishing an appropriate match for the great majority of the pupils in the classroom) should there be a major thrust to learn narrow-band practices and a focus on dealing with underlying process deficits and severely pathological behavior (see figure). (It seems reasonable to assume that few persons are equipped to master or even to acquire minimal competence in using both broad- and narrow-band practices during the limited period allowed for pre-service preparation.)

On the other hand, if a teacher is preparing to serve only that population of pupils who require a very high degree of specific and active, one-to-one interaction with the teacher (in order to facilitate learning and performance), his/her preparation could be limited to learning narrow-band practices (but this preparation would need to encompass all levels and types of instructional concern). In such a case, the teacher should not be expected to be competent to teach in a regular classroom situation. (Also, while such teachers could be helpful in training regular classroom teachers with regard to narrow-band practices, it should be recognized that the former group's lack of experience with broad-band practices might be a handicap.)

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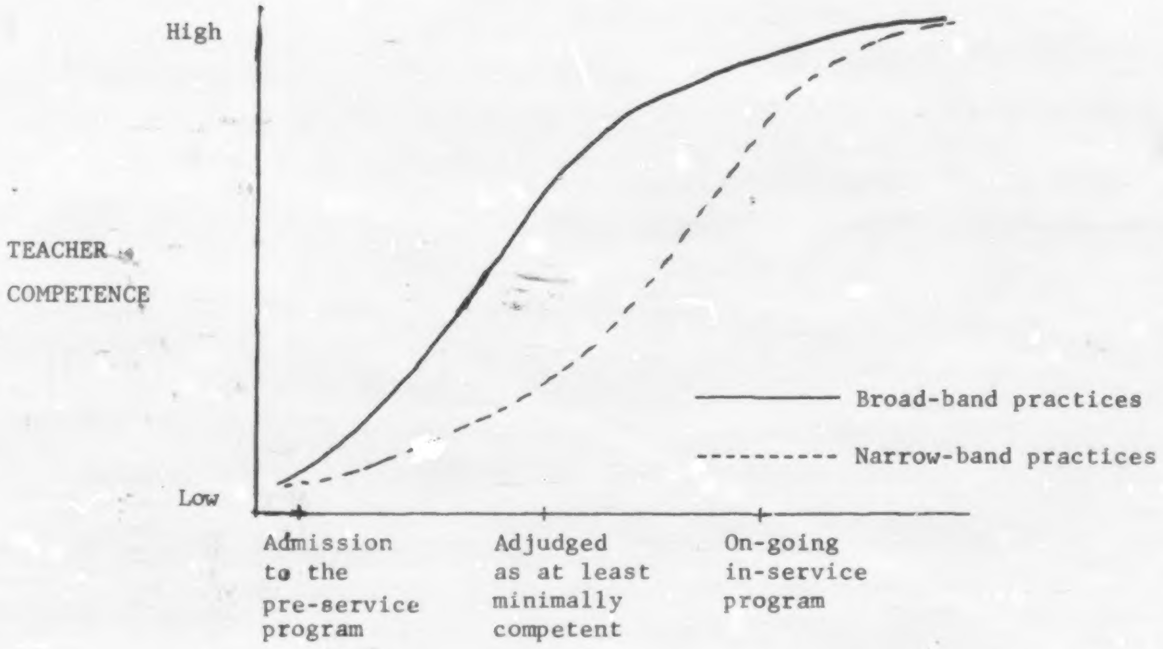
[1] This discussion is adopted from several previously prepared manuscripts by the author.

It is worth re-emphasizing here that, with reference to current teacher education programs, the conceptualization of learning, teaching, and assessment as related to "classroom" instruction which has been presented in this monograph appears to be directly applicable to such programs. For example, (1) the population of both teacher candidates and teachers who are enrolled in pre- and in-service programs seems to fit on a continuum with reference to the degree of specific and active, one-to-one interaction needed with the instructor, and (2) there appears to be a need for teacher educators to use both broad- and narrow-band practices. Thus, teacher education programs are viewed as being governed by the same principles as the instructional programs for which they are preparing personnel, and therefore, the practices used should reflect this situation.



TEACHER EDUCATION (pre- and in-service)

The advocated sequence for developing teacher competency with regard to broad- and narrow-band practices

VI

Criteria for Admission to Preparation Programs and Accredited Professional Standing[1]

Bluntly stated, with reference to the topic of admission criteria, the major question is: Who should be let in and who should be kept out of the education professions? This is closely connected to the question: What are the important characteristics which result in one person being successful and another being unsuccessful in the education professions? In briefly exploring these questions, the focus, first, is on the present state of knowledge regarding the characteristics of effective teachers and, second, is on current admission criteria. Then, to further clarify some problems and to share some thoughts and ideas regarding admission procedures, I shall turn to the critical area of teacher certification.

Characteristics of Effective Teachers. Concern with the characteristics of effective teachers has led to many statements focusing on teacher traits and effectiveness in the hope of establishing criteria pertinent to selection and training. Such statements are usually broad and all-encompassing--e.g., "teachers ought to be bright, well-balanced, well-educated people who like youngsters and who are interested in intellectual and cultural matters" (Koerner, 1963). Even the NEA's National Commission on Teacher Education and Professional Standards (1963) offers only the global view that teachers should manifest high standards of intelligence, academic achievement, physical stamina and health, emotional stability, moral and ethical fitness, knowledge of correct spoken and written English, and ability to work with others.

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[1] This discussion is adapted from several previously prepared manuscripts by the author. The reader who wants to pursue this topic further will find it useful to begin with the annotated bibliography by P.M. Kay et al., entitled Performance based certification (New York: Office of Education, 1971). The bibliography annotates 115 references (1957-1971). It is available through ERIC (ED 056 991 EDRS Price: MF-$0.65; HC-$3.29) In addition, see Chapters 1 and 2 and Appendix B in B. Rosner, chairman, The power of competency-based teacher education. Report of the Committee on National Program Priorities in Teacher Education. Boston: Allyn and Bacon, 1972, for a discussion of rationale and recommendations for competency-based certification--including a proposal for the establishment of educational specialty boards as a certification mechanism.

A more descriptive but still general set of attributes is suggested by Smith et al. (1969):

> If a student is to be prepared for the evolving world, then an essential attribute of the effective teacher is awareness of the realities of that world. . . . the teacher must be able to structure and supervise situations where men can engage in useful activities . . .the teacher must have the skill to bring persons of different races and classes together and to keep the communication process going until differences are resolved . . . the teacher must be well versed in history . . . art and music . . . The effective teacher must be prepared to negotiate interpersonal contracts with students. The effective teacher is a person the students trust. Only a student can discover if the teacher is trustworthy. Therefore, in the training and the evaluation of the trainee's performance, his pupils should be used as a source of data. The teacher must share valuable knowledge and experience . . . he must show the student that what he has to offer is valuable . . . (and) must have that which he is asked to share . . . The teacher must know how to communicate to broad segments of society . . . the teacher must be able to understand the student's world. [p. 7-8]

In contrast to these generalities, assumptions and descriptions regarding the characteristics of effective teachers which arise from empirical studies tend to be more systematically stated. For example, in a study of the relationship between teacher personality and teaching effectiveness, McClain (1968) points out that it is important to deal with "(1) . . . personality as a complex, multidimensional factor . . .,

(2) . . . differences in personality characteristics of elementary and secondary teachers, and (3) . . . personality factors related to sex differences." He reasons that "a teacher may be high on certain of the relevant measures but not all and still be a good teacher because particular strengths may compensate for particular weaknesses" (p. 25).

Unfortunately, as major reviewers of the literature in this area have reported, all such activity ". . . has not yielded meaningful, measurable criteria around which the majority of the nation's educators can rally . . ." (Mitzel, 1960; also see Gage, 1963; Biddle and Ellena, 1964).

Current Criteria. Of course, not all selection and admission criteria are based on current views of the characteristics of effective teachers. Nevertheless, whatever their genesis, it seems reasonable to suggest that criteria for determining who is admitted to preparation programs and to accredited professional standing generally have been formulated without appropriate empirical support. It must therefore, be recognized that current procedures may be invalid indicators of subsequent success. More specifically, in the field of education, selection and admission procedures have been criticized as being inadequate when standards are set too low, considered inappropriate when procedures are judged to be irrelevant, and regarded as a irresponsible deterrent when the judged irrelevance of procedures tends to turn away and thereby exclude people who are potentially able.

The reactions of teacher educators to these criticisms have not been denials. Rather, it has been argued that current selection and admission criteria represent reasonable compromises in view of manpower needs for some pupil populations and/or the costs of developing and implementing more relevant screening and selection procedures. From this perspective, the resulting negative impact on quality and any discrimination against individuals are both viewed as unfortunate byproducts of the necessary compromises.

Among the most frequent compromises are: (1) the establishment of a grade average of "C" as the sufficient admission and/or retention criteria for many teacher-training programs; (2) the requirement of no more than possession of a bachelor's degree by too many graduate programs; (3) the accumulation of time and units as sufficient for most certification processes; (4) the liberal granting of provisional and/or restricted credentials. Since such compromises contribute to the establishment and maintenance of low standards for personnel in the education professions, it seems clear that the assumptions upon which such compromises are based should be investigated empirically. And in the absence of empirical data, common sense should prevail in judging the validity of such assumptions.

Teacher Certification: A Critical Example. The stated rationale for teacher credentials, certificates, and licenses is to guarantee that only qualified individuals are allowed to assume professional roles and functions in the public schools. In practice, however, certification procedures not only have failed to provide such a guarantee but probably have turned many competent people away from a career in education. This situation has arisen because current certification requirements are not tied closely enough to performance criteria, and for good cause--i.e., the minimal competencies which are required for on-the-job success have not been satisfactorily delineated (see the first article in this series). As Allen and Wagschal (1969) state, "no one yet has any idea of the criteria of performance (as opposed to 'units' of any given course) that a person ought to meet in order to be a successful teacher at any level or in any subject matter field" (p. 137). Thus, current credentialing procedures which establish time and units as requirements are at best a guarantee that an individual has completed such requirements and at worst they are a barrier to competent individuals who have not accumulated the appropriate units. Clearly, if the true goal is to guarantee that an individual can do the job successfully, then qualifying procedures should assess not time and units, but actual competence--e.g., knowledge and skills. In addition to screening out applicants who are unquestionably of poor quality, information acquired from certification procedures also can be used by in-service program planners and instructors as guidelines for improving and/or developing needed competencies before requiring an individual to perform at a level where the lack of competency would be troublesome.

The problem here is that practical procedures for assessing actual competency are yet to be developed. One such procedure might involve a comprehensive on-the-job evaluation of what a potential teacher knows and can do effectively before a credential or license is issued. This would not be as impractical as it may seem at first glance. From the standpoint of immediate practice, all that might be involved, in essence, is a shift in the responsibility for judging a person's qualifications--i.e., from a credentials analyst clerk in a state department of education to the joint action of the appropriate professionals in the institutions of higher education and the school districts. It would be possible to empower a school district to employ any graduate of a professionally accredited pre-service program with the stipulation that the person meet the district's accredited minimal standards within a given period of time in order to be licensed for that role and function and thus be allowed to continue to teach. Under these circumstances, the state could issue the certificate on the recommendation of the district and could maintain quality control through professional accreditation committees which would review the pre-service programs and the school district's minimal competency standards. Hopefully, the quality of accreditation procedures would improve as basic issues and problems related to content, process, and evaluation are resolved (see Chapters 1-6). It should be noted that at the present time some states issue a teaching credential upon the recommendation of an institution of higher education which has a program approved by the state board of education.

Less satisfactorily, verbal (written and/or oral) and performance tests could be developed to assess knowledge and skill. However, it should be recognized that the awarding of certificates based on such data does not represent a guarantee of teaching competence but a prediction of competence. And since the accuracy of such a prediction is a function of the reliability and validity of the test, predictive accuracy will probably decrease (1) the less the test situation approximates the teaching situation and (2) the less comprehensively the test samples an individual's knowledge and skill with reference to his teaching impact.

Since there has been considerable debate as to whether there should be a separate credential for specialist teachers, a few specific comments on this topic seem in order. As indicated above, any credential which is not based on performance criteria is a poor predictor of on-the-job competence and quality. In the absence of delineated performance criteria for specialist teachers, the solution should not be to simply accept course, unit, and hour accomplishments. At the very least, the emphasis in certifying specialists should be on screening out individuals whose personal characteristics and/or lack of competence could result in perpetuating or worsening a youngster's problems. More specifically, more effective means for certifying competence must be explored. For example, the state could reasonably (1) accept the recommendations of professionally accredited trainers and/or (2) allow schools to employ graduates of accredited programs and then accept the district's recommendations regarding certification for a particular role and function. If such procedures were employed, an improvement in quality of preparation programs might be forced due to pressure both from the state in refusing to accredit poor programs and from the districts in refusing to accept graduates of accredited programs which have been producing relatively poorly qualified personnel. This pressure may be just what is needed to encourage those responsible for preparation programs to be more aware of performance criteria and to focus on producing individuals with appropriate competence. Furthermore, such procedures should do away with anomalies such as restricted credentials which suggest that an individual can be competent to teach pupils who manifest problems, but is not competent to teach regular students. As should be evident at this point, such teachers require the level of competence needed for successfully teaching regular students and then some.

Many of the conflicts which have arisen with regard to teacher preparation and qualifications, such as the debate over certification, will be resolved satisfactorily only after the substantive issues and problems which permeate teacher education programs are resolved. If the goal is to make sure that teachers are competent, the first step is to guarantee that the programs which prepare them for teaching are well conceived and implemented. This will not result simply by establishing accreditation standards; there is also a need for a combined and concerted effort on the part of general and special educators to provide some systematic answers for the issues and problems which have been discussed throughout this monograph.

In summary, then, this discussion emphasizes the problems related to and the value accrued from properly established and employed selection procedures. It should be evident that the problems in this area are intimately related to the previously discussed need for clarifying levels of minimal competence and professional standards. Only after such levels of competence and standards are delineated will it be possible to establish appropriate criteria for assessing performance abilities.

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